445

EXPANDED SITE INSPECTION
of the
BLOEDE MANUFACTURER PROPERTY
Baltimore City (MD-466)

Volume II

ANALYTICAL DATA

August 1995

Prepared by: Maryland Department of the Environment
Waste Management Administration
Environmental Restoration and Redevelopment Program
2500 Broening Highway
Baltimore, Maryland 21224

Prepared for: U.S. Environmental Protection Agency
Region III
841 Chestnut Building
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U.S. EPA Region III
Central Regional Laboratory
Environmental Services Division
Annapolis, Maryland

ANALYTICAL REPORT

BLOEDE MANUFACTURING

SUPERFUND REMOVAL/REMEDIAL Acct # TFA03N9ZZ
Lab Request No. REQ95087

June 07, 1995

U.S. EPA Region III
Central Regional Laboratory
Annapolis, Maryland

June 07, 1995

ANALYTICAL RESULTS: BLOEDE MANUFACTURING [REQ95087]

Dear Mike Giuranna (3HW73),

Enclosed is our analytical report for the above case. It is organized into several sections: Analytical Request and Sample Descriptions, Organic, Inorganic, and Microbiological Results. All data were reviewed by a peer and a laboratory manager.

Analytical Request and Sample Descriptions: (General)
Each laboratory assigned number, station, description, matrix, sample date and locational data is reported. A table summarizes the tests assigned to each sample. A glossary and qualifier code definition is provided.

Inorganic Results:
For requests assigned inorganic tests, results are grouped by service group, e.g., Metals. Sample results are reported; non-detects are provided with the actual quantitation limit. Method description and quality control protocols are described in analyst narratives.

Organic Results:
For the requested organic tests, results are grouped by service group, e.g., Volatile Organic Compounds. Only detected analytes are reported. Nominal Quantitation Limit (NQL) tables are provided for each service group. Specific information for the calculation of Actual Quantitation Limits (AQL) achieved for a given sample is included. Quality control values are provided in summary tables with acceptance criteria. Method description and quality control protocols are described in analyst narratives.

Microbiological Results:
For requests assigned microbiological tests, sample results and quality control values are incorporated into a single table. Method description and quality control protocols are described in analyst narratives.

If you have any questions we may be reached at 410-573-2600.

Approval for Release:

Daniel J. O'Connell 6/19/95

Peggy S. Gordon 6/10/95

cc: Chris Pajak (MD DEPT OF THE ENVIRONMENT)

Facility: BLOEDE MANUFACTURING
Program: SUPERFUND REMOVAL/REMEDIAL

Batch ID: REQ95087
Account #: TFA03N9ZZ

SAMPLE DESCRIPTIONS

Sample #	Station, Description	Matrix	Type	End Collection Date	Time	Latitude	Longitude
95041301	STA S-1, S-1	Bottom Sediment or Deposition	GRAB	04/12/95	10:00		
95041302	STA S-2, S-2	Bottom Sediment or Deposition	GRAB	04/12/95	10:40		
95041303	STA S-3, S-3	Bottom Sediment or Deposition	GRAB	04/12/95	11:25		
95041304	STA S-4, S-4	Bottom Sediment or Deposition	GRAB	04/12/95	09:25		
95041305	STA S-5, S-5	Bottom Sediment or Deposition	GRAB	04/12/95	10:05		
95041306	STA S-6, S-6	Bottom Sediment or Deposition	GRAB	04/12/95	14:10		
95041307	STA S-7, S-7	Bottom Sediment or Deposition	GRAB	04/12/95	11:25		
95041308	STA SW-1, SW-1	Ground Water/Monitoring Wells	GRAB	04/12/95	09:30		
95041309	STA SW-2, SW-2	Ground Water/Monitoring Wells	GRAB	04/12/95	11:30		
95041310	STA SW-3, SW-3	Ground Water/Monitoring Wells	GRAB	04/12/95	12:00		
95041311	STA SW-4, SW-4	Ground Water/Monitoring Wells	GRAB	04/12/95	10:30		
95041312	STA SW-5, SW-5	Ground Water/Monitoring Wells	GRAB	04/12/95	11:30		
95041313	STA SED-1, SED-1	Bottom Sediment or Deposition	GRAB	04/12/95	09:30		
95041314	STA SED-2, SED-2	Bottom Sediment or Deposition	GRAB	04/12/95	11:30		
95041315	STA SED-3, SED-3	Bottom Sediment or Deposition	GRAB	04/12/95	12:00		
95041316	STA SED-4, SED-4	Bottom Sediment or Deposition	GRAB	04/12/95	10:30		
95041317	STA SED-5, SED-5	Bottom Sediment or Deposition	GRAB	04/12/95	11:30		
95041318	STA B-1, B-1	Aqueous Matrix - Type Unspecified	GRAB	04/12/95	09:40		
95041319	STA RB-1, RB-1	Aqueous Matrix - Type Unspecified	GRAB	04/12/95	13:40		

Facility: BLOEDE MANUFACTURING
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TESTS REQUESTED
(X = Test was Requested)

Inorganic Tests Assigned:	Sample No. 950413-														
	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
Mercury by Semi-Automated Cold Vapor Technique	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Metals Analysis	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Percent Dry Weight at 105 degree C	X	X	X	X	X	X	X						X	X	X
Percent Dry Weight at 60 degree C	X	X	X	X	X	X	X						X	X	X
Total Cyanide	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Organic Tests Assigned:	Sample No. 950413-														
	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
PCBs and Pesticides by Gas Chromatography	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Semivolatile Organics by GC/MS	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Volatile Organic Compounds by Purge and Trap GC/MS	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Facility: BLOEDE MANUFACTURING
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TESTS REQUESTED
(X = Test was Requested)

Inorganic Tests Assigned:	Sample No. 950413-														
	16	17	18	19											
Mercury by Semi-Automated Cold Vapor Technique	X	X	X	X											
Metals Analysis	X	X	X	X											
Percent Dry Weight at 105 degree C	X	X													
Percent Dry Weight at 60 degree C	X	X													
Total Cyanide	X	X	X	X											

Organic Tests Assigned:	Sample No. 950413-														
	16	17	18	19											
PCBs and Pesticides by Gas Chromatography	X	X	X	X											
Semivolatile Organics by GC/MS	X	X	X	X											
Volatile Organic Compounds by Purge and Trap GC/MS	X	X	X	X											

ORIGINAL (Red)

QUALIFIER CODE AND GLOSSARY DEFINITIONS

Qualifier Codes:

< =	Sample value is below the quantitation limit. Quantitation limit reported.
</= =	Reported value is estimated. Sample was analyzed in duplicate, one value is equal to or above the quantitation limit and one below. Average of quantitation limit and detected value reported.
> =	Sample value is above the quantitation range.
A =	Quality control value is outside acceptance limits.
B =	Not detected substantially above (10 times) the level reported in the laboratory or field blanks (includes field, trip, rinsate, and equipment blanks).
C =	See report narrative for analyst's observations concerning this result.
D =	Sample and duplicate values are below the quantitation limit. Quantitation limit reported.
E =	Value exceeds a theoretically equivalent or greater value (e.g. dissolved > total, orthophosphate > total phosphorus). However, the difference is within the expected precision of the analytical techniques and is not statistically significant.
I =	An interference exists which masks true response. See report narrative for explanation.
J =	Analyte present. Reported value is estimated; concentration is outside the range for accurate quantitation.
K =	Analyte present. Reported value may be biased high. Actual value is expected to be lower.
L =	Analyte present. Reported value may be biased low. Actual value is expected to be higher.
N =	Presumptive evidence indicates the presence of the compound. Special methods and/or method modifications may be needed to confirm its presence or absence in future sampling efforts.
NA =	Analysis was not requested.
Q =	No analytical results. See report narrative for explanation.
R =	Unreliable results. Analyte may or may not be present in the sample. Supporting data is necessary to confirm results.
T =	Tentatively identified compound. Identified as a result of a library search using the EPA/NIH Mass Spectral Library. Authentic standards were not available to properly identify and quantitate the compound. The reported concentration is an estimate.
TD =	Spike recovery too dilute for accurate quantitation.
UJ =	Not detected. Quantitation limit is estimated.
UL =	Not detected. Quantitation limit is probably higher.

Glossary:

FD2 =	Field duplicate sample; two environmental samples taken at the same time and place under identical conditions and treated identically in the field and laboratory.
FRB =	Field blank; a clean sample of the matrix of interest treated like a sample in the field and laboratory. (Exposed to sampling conditions)
LFM =	Laboratory fortified blank; a known increment of target analyte made to an aliquot of clean sample matrix. The LFM is treated like a sample in the laboratory.
LRB =	Laboratory reagent blank; an aliquot of reagent water or clean sample matrix treated like a sample in the laboratory.
MS/MSD=	Matrix spike/matrix spike duplicate; a known increment of target analyte made to a sample before preparation or analysis.
MSA =	Method of Standard Additions
RIN =	Equipment/rinsate blank collected in the field to check the cleanliness of sampling devices.
RPD =	Relative Percent Difference; the results for duplicate analyses are presented as the mean and the relative percent difference.

$$RPD = \frac{|Replicate1 - Replicate2|}{(Replicate1 + Replicate2)/2} \times 100$$

SAM =	Sample; a portion of the whole or a single item of a group that is representative of the environmental properties conditions of interest.
TRP =	Trip blank; a clean sample of the matrix of interest that is carried to the sampling site and transported to the laboratory for analysis without being exposed to sampling conditions.
() =	*Numbers in parentheses are analytical spike recoveries (e.g. post-digestion spikes).*
[] =	Numbers in brackets are matrix spike recoveries (e.g. pre-digestion spikes).

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Environmental Services Division

INORGANIC ANALYTICAL REPORT

BLOEDE MANUFACTURING
SUPERFUND REMOVAL/REMEDIAL Acct # TFA03N9ZZ
Lab Request No. REQ95087

Signature
Inorganic Review: Richard Thaung 6/13/95
(date)

U.S. EPA Region III
Central Regional Laboratory
Annapolis, Maryland

Section: INORGANIC
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Facility: BLOEDE MANUFACTURING
Program: SUPERFUND REMOVAL/REMEDIAL

Batch ID: REQ95087
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INORGANIC ANALYTICAL SAMPLE RESULTS

Analytes:

Sample Number/Units:

	95041301 SAM S-1			95041302 SAM S-2			95041303 SAM S-3			95041304 SAM S-4		
IN-CHEMICAL	mg/kg	%REC	RPD	mg/kg	%REC	RPD	mg/kg	%REC	RPD	mg/kg	%REC	RPD
Cyanide	< 1.0	[125]	0	< 1.0	[109]	0	< 1.0	(94)		< 1.0		
IN-PHYSICAL	%	%REC	RPD	%	%REC	RPD	%	%REC	RPD	%	%REC	RPD
Percent Dry Weight (105C)	86.7			83.5		2	61.0			92.6		
Percent Dry Weight (60C)	87.8		0	84.7			62.0			92.9		
METALS	mg/kg	%REC	RPD	mg/kg	%REC	RPD	mg/kg	%REC	RPD	mg/kg	%REC	RPD
Aluminum	22900		1	10400	(108)		14100			7470		
Antimony	<1.0	(MSA)	0	<1.0	(MSA)		1.2	(MSA)		6.4	(91)	
Arsenic	6.8	(101)	2	4.1	[81]		4.2	(97)		26.4	(85)	
Barium	61.0		0	85.7	[106]		82.3			186		
Beryllium	0.6		1	<0.5	[108]		0.6			<0.5		
Cadmium	<0.5		0	<0.5	[112]		0.8			<2.5		
Calcium	3220		3	3970	(102)		6820			76900		
Chromium	38.3		0	38.5	(101)		35.0			226		
Cobalt	6.9		2	12.9	[100]		8.7			<25.0		
Copper	30.1		3	53.8	[105]		158			332		
Iron	29600		0	22400	(129)		22400			216000		
Lead	30.8		2	140	[86]		162			1310		
Magnesium	2700		1	2790	(104)		1590			38600		
Manganese	166		2	380	(106)		148			2490		
Mercury	<0.1			0.2			0.3			0.2		
Nickel	11.1		3	17.3	[100]		15.8			179		
Potassium	926		2	688	[118]		811			2390		
Selenium	<0.4	(92)	0	0.6	(MSA)		1.9	(85)		0.8	(MSA)	
Silver	<1.0		0	<1.0	(104)		<1.0			<5.0		
Sodium	<200		0	<200	(103)		207			1040		

Facility: BLOEDE MANUFACTURING
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INORGANIC ANALYTICAL SAMPLE RESULTS

Analytes: **Sample Number/Units:**

	95041301 SAM S-1			95041302 SAM S-2			95041303 SAM S-3			95041304 SAM S-4		
METALS	ug/g	%REC	RPD	ug/g	%REC	RPD	ug/g	%REC	RPD	ug/g	%REC	RPD
Thallium	<0.5	(111)	0	<0.5	[91]		<0.5	(104)		<0.5	(108)	
Vanadium	62.5		0	49.1	[103]		46.7			91.0		
Zinc	76.9		1	122	[105]		350			568		

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INORGANIC ANALYTICAL SAMPLE RESULTS

Analytes:	Sample Number/Units: 95041305 SAM S-5			95041306 SAM S-6			95041307 FD2 S-7			95041308 SAM S-8-1		
IN-CHEMICAL	mg/Kg	%REC	RPD	mg/Kg	%REC	RPD	mg/Kg	%REC	RPD	mg/Kg	%REC	RPD
Cyanide	< 1.0			< 1.0			< 1.0			< 0.02	(120)	
IN-PHYSICAL	%	%REC	RPD	%	%REC	RPD	%	%REC	RPD			
Percent Dry Weight (105C)	86.2			89.8			60.3					
Percent Dry Weight (60C)	84.8			89.5			61.6					
METALS	mg/Kg	%REC	RPD	mg/Kg	%REC	RPD	mg/Kg	%REC	RPD	mg/Kg	%REC	RPD
Aluminum	18800			9650		4	12000	(103)		270		
Antimony	<1.0	(108)		<1.0	(MSA)	D	1.5	(MSA)		<10	(MSA)	
Arsenic	3.3	(114)		5.4	(93)	7	3.7	[93]		<2	(91)	
Barium	49.0			70.0		16	88.1	[95]		<200		
Beryllium	<0.5			<0.5		D	0.5	[87]		<5		
Cadmium	<0.5	(104)		<1.0		D	0.8	[104]		<5		
Calcium	989	(102)		122000		0	7270	(100)		41900		
Chromium	30.5			19.4		14	33.7	(99)		<10		
Cobalt	5.4			<15.0		D	7.9	[85]		<50		
Copper	11.1			35.6		2	152	(98)		<25		
Iron	24900			16900		8	19900	(108)		1000		
Lead	14.9			130		3	150	(94)		3	(101)	
Magnesium	1650			58000		1	1510	[87]		13000		
Manganese	84.0			185		6	134	(98)		210		
Mercury	<0.1			0.2	[81]	15	0.3			<0.2		
Nickel	9.1			19.8		3	14.0	[85]		<40		
Potassium	871			1870		4	692	[94]		2750		
Selenium	0.8	(MSA)		<0.4	(MSA)	D	2.5	[84]		<5	(95)	
Silver	<1.0			<1.0		D	<1.0	[95]		<10		
Sodium	<200			<600		D	202	[95]		18800		

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INORGANIC ANALYTICAL SAMPLE RESULTS

Analytes: Sample Number/Units:

METALS	95041305 SAM ug/g	%REC	RPD	95041306 SAM ug/g	%REC	RPD	95041307 FD2 ug/g	%REC	RPD	95041308 SAM ug/g	%REC	RPD
Thallium	<0.5	(106)		<0.5	(111)	D	<0.5	[99]		<5	(107)	
Vanadium	42.5	(103)		46.5		5	47.7	[92]		<50		
Zinc	27.1			244		6	316	(104)		22		

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INORGANIC ANALYTICAL SAMPLE RESULTS

Analytes: | **Sample Number/Units:**

	95041309 SAM SW-2			95041310 SAM SW-3			95041311 SAM SW-4			95041312 FD2 SW-5		
IN-CHEMICAL	**UG/L**	**%REC**	**RPD**	**UG/L**	**%REC**	**RPD**	**UG/L**	**%REC**	**RPD**	**UG/L**	**%REC**	**RPD**
Cyanide	< 0.02			< 0.02			< 0.02	[123]	D	< 0.02		
IN-PHYSICAL												
Percent Dry Weight (105C)												
Percent Dry Weight (60C)												
METALS	**UG/L**	**%REC**	**RPD**	**UG/L**	**%REC**	**RPD**	**UG/L**	**%REC**	**RPD**	**UG/L**	**%REC**	**RPD**
Aluminum	<200			414		24	1300	[100]		<200		
Antimony	<10	(MSA)		<10	(MSA)	D	<10	[107]		<10	(MSA)	
Arsenic	<2	(90)		<2	(91)	D	<2	[88]		<2	(91)	
Barium	<200			<200		D	<200	[110]		<200		
Beryllium	<5			<5		D	<5	[107]		<5		
Cadmium	<5			<5		D	<5	[110]		<5		
Calcium	37100			39500		0	27800	[113]		37400		
Chromium	<10			<10		D	<10	[107]		<10		
Cobalt	<50			<50		D	<50	[106]		<50		
Copper	<25			<25		D	<25	[106]		<25		
Iron	588			1200		1	360	[100]		494		
Lead	<2	(104)		4	(100)	5	<2	[102]		<2	(111)	
Magnesium	11800			12600		2	10300	[101]		11900		
Manganese	112			190		1	131	[104]		98		
Mercury	<0.2			<0.2			<0.2	[119]	D	<0.2		
Nickel	<40			<40		D	<40	[104]		<40		
Potassium	2780			3050		1	2760	[104]		2780		
Selenium	<5	(95)		<5	(102)	D	<5	[95]		<5	(95)	
Silver	<10			<10		D	<10	[100]		<10		
Sodium	21200			21700		1	21000	[113]		21200		

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INORGANIC ANALYTICAL SAMPLE RESULTS

Analytes: Sample Number/Units:

	95041309 SAM			95041310 SAM			95041311 SAM			95041312 FD2		
METALS	UG/L	%REC	RPD	UG/L	%REC	RPD	UG/L	%REC	RPD	UG/L	%REC	RPD
Thallium	<5	(115)		<5	(MSA)	D	<5	[116]		<5	(MSA)	
Vanadium	<50			<50		D	<50	[105]		<50		
Zinc	<20			30		7	<20	[105]		<20		

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INORGANIC ANALYTICAL SAMPLE RESULTS

Analytes: | Sample Number/Units:

	95041313 SAM			95041314 SAM			95041315 SAM			95041316 SAM		
IN-CHEMICAL	mg/Kg	%REC	RPD	mg/Kg	%REC	RPD	mg/Kg	%REC	RPD	mg/Kg	%REC	RPD
Cyanide	< 1.0			< 1.0			< 1.0			< 1.0		
IN-PHYSICAL	%	%REC	RPD	%	%REC	RPD	%	%REC	RPD	%	%REC	RPD
Percent Dry Weight (105C)	82.1			80.7			81.8			75.0		
Percent Dry Weight (60C)	77.1			82.6			73.8		2	72.2		
METALS	ug/g	%REC	RPD	ug/g	%REC	RPD	ug/g	%REC	RPD	ug/g	%REC	RPD
Aluminum	7710			5160			6510			7190		
Antimony	<1.0	(108)		<1.0	(96)		<1.0	(104)		<1.0	(111)	
Arsenic	1.5	(94)		2.6	(90)		1.7	(107)		1.1	(113)	
Barium	34.4			21.0			31.1			34.2		
Beryllium	<0.5			<0.5			<0.5			<0.5		
Cadmium	<0.5			<0.5			<0.5			<0.5		
Calcium	12000			13400			11500			9150		
Chromium	37.9			46.2			42.2			61.6		
Cobalt	10.7			10.1			9.0			8.7		
Copper	24.5			18.9			19.2			26.5		
Iron	18000			23000			18800			14200		
Lead	36.9			37.9			18.2			53.5		
Magnesium	6300			8180			5670			5580		
Manganese	358			250			264			260		
Mercury	<0.1			<0.1			<0.1			<0.1	[93]	D
Nickel	18.5			16.5			14.2			18.0		
Potassium	412			339			408			644		
Selenium	<0.4	(85)		0.4	(MSA)		<0.4	(85)		<0.4	(89)	
Silver	<1.0			<1.0			<1.0			<1.0		
Sodium	296			274			251			276		

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INORGANIC ANALYTICAL SAMPLE RESULTS

Analytes:	Sample Number/Units:											
	95041313 SAM ========			95041314 SAM ========			95041315 SAM ========			95041316 SAM ========		
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Thallium	<0.5	(95)		<0.5	(106)		<0.5	(100)		<0.5	(100)	
Vanadium	41.1			43.3			37.0			37.3		
Zinc	77.1			62.5			68.5			66.9		

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INORGANIC ANALYTICAL SAMPLE RESULTS

Analytes:	Sample Number/Units: 95041317 FD2			95041318 FRB			95041319 RIN		
IN-CHEMICAL	mg/kg	%REC	RPD	mg/L	%REC	RPD	mg/L	%REC	RPD
Cyanide	< 1.0			< 0.02			< 0.02		
IN-PHYSICAL	%	%REC	RPD						
Percent Dry Weight (105C)	80.8								
Percent Dry Weight (60C)	76.6								
METALS	mg/kg	%REC	RPD	ug/L	%REC	RPD	ug/L	%REC	RPD
Aluminum	5770			<200			<200		
Antimony	<1.0	(MSA)		<10			<10		
Arsenic	1.3	(92)		<2			<2		
Barium	26.9			<200			<200		
Beryllium	<0.5			<5			<5		
Cadmium	<0.5			<5			<5		
Calcium	12400			<500			<500		
Chromium	27.7			<10			<10		
Cobalt	7.6			<50			<50		
Copper	18.6			<25			<25		
Iron	14600			<100			<100		
Lead	53.4			<2			<2		
Magnesium	5740			<500			<500		
Manganese	197			<15			<15		
Mercury	<0.1			<0.2			<0.2		
Nickel	9.9			<40			<40		
Potassium	430			<1000			<1000		
Selenium	<0.4	(85)		<5			<5		
Silver	<1.0			<10			<10		
Sodium	254			<2000			<2000		

Facility: BLOEDE MANUFACTURING
Program: SUPERFUND REMOVAL/REMEDIAL

Batch ID: REQ95087
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INORGANIC ANALYTICAL SAMPLE RESULTS

Analytes: **Sample Number/Units:**

	95041317 FD2			95041318 FRB			95041319 RIN		
METALS	ug/L	REC	RPD	ug/L	REC	RPD	ug/L	REC	RPD
Thallium	<0.5	(95)		<5			<5		
Vanadium	35.6			<50			<50		
Zinc	62.6			<20			<20		

METALS DETERMINATIONS

Analysts:

R.T. McClain, Lockheed Chemist
M.T. Wilkerson, Lockheed Chemist
J.L. Molnar, Lockheed Chemist
M.J. Chang, Lockheed Chemist

Methods:

Samples 950413-01 through 950413-19 from Bloede Manufacturing were prepared for analysis by acid digestion and analyzed by furnace atomic absorption spectroscopy and inductively coupled plasma optical emission spectrometry. The following are the digestion and analytical techniques and methods employed:

Digestion Methods

Method from CLP SOW 9/91 revision, p. D-5, A.1. for Furnace AAS (excluding antimony)
Method from CLP SOW 9/91 revision, p. D-5, A.2. for ICP-AES, Flame AAS, and antimony by Furnace AAS
Method 3050, excluding HCl for furnace AAS (excluding antimony) (solid samples) (1)
Method 3050, for ICP-AES, Flame AAS, and antimony by Furnace AAS (solid samples) (1)

Analytical Methods

EPA Method 204.2 and Internal SOP R3-QA132, antimony by Furnace AAS (2)
EPA Method 206.2 and Internal SOP R3-QA132, arsenic by Furnace AAS (2)
EPA Method 239.2 and Internal SOP R3-QA132, lead by Furnace AAS (2)
EPA Method 270.2 and Internal SOP R3-QA132, selenium by Furnace AAS (2)
EPA Method 279.2 and Internal SOP R3-QA132, thallium by Furnace AAS (2)
EPA Method 200.7 and Internal SOP R3-QA132, remaining elements by ICP-AES (2)

(1) SW-846, 2nd Edition, Test Methods for Evaluating Solid Waste Physical /Chemical Methods
(2) 1979/83 EPA Manual of Methods for Chemical Analysis of Water and Wastes

Results for solid samples are reported in ug/g (ppm) DRY weight at 60 degrees centigrade. This Percent Dry Weight test pertains only to metals results. The drying temperature of 60 degrees centigrade is selected to retain volatile elements. The Percent Dry Weight (60°C) is reported to allow for conversion to wet weight.

Quality Control:

Samples analyzed in duplicate (method duplicates) are reported as the Mean and the Relative Percent Difference (RPD) of the two analytical values. Routine Quality Control (QC) performed includes preparation and analysis of audit materials; check standards; interference check samples (ICS--for ICP-AES only); method blanks; method spikes; analytical spikes; method duplicates; and analytical duplicates. Calibration standards for ICP-AES are prepared from NIST stock solutions. Calibration standards for Furnace AAS are prepared from Baker stock solutions. Method blanks are prepared with each analytical set and are acceptable if they are found to be below the quantification level for the sample set. Audit materials are analyzed at the beginning of each run to document proper instrument calibration. For ICP-AES the acceptable range is 90-110% recovery; for other techniques it is the 95% confidence interval generated using the True Values and algorithms from EMSL-Cincinnati. Check standards are analyzed periodically (generally a 1/10 frequency) throughout the run to document instrumental stability, and are acceptable at 90-110%. The ICS is obtained from EMSL-Las Vegas and is analyzed at the beginning of each ICP-AES run to document proper selection of analytical lines, background correction factors, and interelement correction factors; it is acceptable at 80-120% recovery. The remaining QC items are sample specific and are performed at a frequency of 1/10 samples for sample sets $\geq$ 10 and 1 per sample set for sample sets <10, except for analytical spikes for Furnace AAS which requires a passing analytical spike or successful Method of Standard Additions for each sample. Acceptance limits for Precision (method and instrumental duplicates) are generated for each element/matrix/analytical procedure using a Shewhart Chart and the most recent 25 duplicate values. Acceptance limits for analytical spikes for Flame AAS and for ICP-AES are generated for 95% confidence intervals for each element/matrix/analytical procedure using the most recent 25 spike recoveries. Acceptance limits for analytical spikes for Furnace AAS are set at 85-115%. Acceptance limits for matrix spikes are 80-120% recovery; when matrix spikes fail an acceptable analytical spike must be prepared and analyzed.

NOTE: The detection limits of cadmium, cobalt, and silver for sample 950413-04 and cadmium, cobalt, and sodium for sample 950413-06 have been raised due to matrix interferences.

PERCENT DRY WEIGHT DETERMINATIONS

Analyst:

William Pabst, III
Chemist/Lockheed

TID: 03-9504-47

Method:

The soil samples from Bloede Manufacturing (Batch ID # REQ95087) were analyzed for Percent Dry Weight as required by EPA analytical methods. The samples were dried at 105°C following the procedure outlined in EPA Region III Central Regional Laboratory's SOP #R3QA056.0.

These results are to be used to convert analyte concentrations to a dry weight basis for organic and non-metal analyses. Normally, analytical values are reported on a wet weight basis for organics and non-metals. All metals reported use a 60°C drying temperature for the percent dry weight determinations, as required by the methodology. The 60°C percent dry weight values are reported with the metals results, if applicable.

Weighing dishes used for these samples were sequentially numbered, oven-dried overnight at 105°C, and then cooled in a desiccator before the empty dish weight was recorded. Five to ten grams of each sample was then placed on an empty dish and the total weight recorded. The samples were then placed in an oven and oven-dried overnight at 105°C. When the samples were removed from the oven they were cooled in a desiccator before their weight was recorded for the determination of percent dry weight. All weights were recorded after all appropriate calibration checks were completed on the balance using Class S weights.

TOTAL CYANIDE DETERMINATIONS

Analyst:

Anna Wuerfel
Chemist/Lockheed

TID #: 0395-0446

Method:

Samples 950413-01 through 950413-19 from Bloede Manufacturing were analyzed for total cyanide using EPA Method 335.4.

Soil results are reported on a WET weight basis.

U.S. EPA Region III
Central Regional Laboratory
Annapolis, Maryland

Environmental Services Division

ORGANIC ANALYTICAL REPORT

BLOEDE MANUFACTURING
SUPERFUND REMOVAL/REMEDIAL Acct # TFA03N9ZZ
Lab Request No. REQ95087

Signature
Organic Review: Susan Warner 6/15/95
(date)

U.S. EPA Region III
Central Regional Laboratory
Annapolis, Maryland

Section: ORGANIC
Page: A1

Facility: BLOEDE MANUFACTURING
Program: SUPERFUND REMOVAL/REMEDIAL

Batch ID: REQ95087
Account #: TFA03N9ZZ

ORGANIC ANALYTICAL SAMPLE RESULTS

Analytes:	Sample Number:									
	95041301 SAM	95041302 SAM	95041303 SAM	95041304 SAM	95041305 SAM	95041306 SAM	95041307 FD2	95041308 SAM	95041309 SAM	95041310 SAM
Percent Dry Weight (105 C)	86.7	83.5	61.0	92.6	86.2	89.8	60.3			
BNA										
NQL FACTOR:	2	1	1.5	3	2	1	1.5	1	1	1
UNITS:	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/L	ug/L	ug/L
Acenaphthene	0.2 J			0.3 J						
Acenaphthylene	0.70					0.2 J				
Anthracene	1.04	0.06 J		0.4 J	0.03 J	0.09 J	0.05 J			
Benzo(B)Fluoranthene	3.44	0.3 J	0.2 J	0.9 J	0.2 J	0.58	0.2 J			
Benzo(a)Anthracene	2.49	0.3 J	0.1 J	1.22	0.2 J	0.3 J	0.3 J			
Benzo(a)Pyrene	3.55	0.3 J	0.2 J	0.9 J	0.2 J	0.58	0.2 J			
Benzo(g,h,i)Perylene	2.59	0.08 J		0.7 J		0.71	0.1 J			
Benzo(k)Fluoranthene	3.36	0.3 J	0.2 J	1.26	0.3 J	0.65	0.3 J			
Benzoic Acid				1 J		UJ				
Bis(2-Ethylhexyl)Phthalate		0.08 B	0.2 B	1.6 B	1.1 B	0.3 B	0.2 B			
Butylbenzylphthalate				0.3 J						
Chrysene	3.84	0.3 J	0.2 J	1.56	0.2 J	0.47	0.3 J			
Di-n-Butylphthalate		0.04 B		0.09 B						
Dibenzofuran	0.2 J			0.2 J		0.04 J				
4,6-Dinitro-2-Methylphenol	UJ	UJ	UJ		UJ		UJ			
Fluoranthene	8.23 C	0.66	0.4 J	2.87	0.6 J	0.60	0.60			
Fluorene	0.5 J			0.3 J						
Indeno(1,2,3-cd)Pyrene	2.28			0.6 J		0.49				
2-Methylnaphthalene	0.1 J	0.03 J		0.3 J		0.07 J				
Naphthalene	0.5 J			0.2 J		0.1 J				
N-Nitrosodimethylamine	UJ	UJ	UJ		UJ		UJ			
Phenanthrene	7.46 C	0.45	0.2 J	2.16	0.3 J	0.37	0.3 J			
Pyrene	10.1 C	0.76	0.4 J	3.08	0.6 J	0.82	0.74			

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ORGANIC ANALYTICAL SAMPLE RESULTS

Analytes:	Sample Number:									
	95041301 SAM	95041302 SAM	95041303 SAM	95041304 SAM	95041305 SAM	95041306 SAM	95041307 FD2	95041308 SAM	95041309 SAM	95041310 SAM
ORGANICS										
NQL FACTOR:	1	1	1		5	7.5	1			
UNITS:	ug/Kg	ug/Kg	ug/Kg		ug/Kg	ug/Kg	ug/Kg			
Aldrin	0.0074				0.012 R	0.089 R				
Alpha BHC										
Alpha Chlordane		0.016 I								
Aroclor 1254	0.029	0.19	0.47			0.70	0.50			
Beta BHC							0.0086 R			
4,4'-DDE	0.021									
4,4'-DDT	0.056	0.020								
Delta BHC			0.014							
Dieldrin	0.054				0.038 R	0.55				
Endosulfan Sulfate					0.052 R					
Endrin		0.026 I			0.021 R					
Endrin Aldehyde					0.021 R					
Endrin Ketone					0.042					
Gamma BHC (Lindane)			0.014 R				0.022 R			
VOA										
NQL FACTOR:	1	1	1	1	1	1	1	1	1	1
UNITS:	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/L	ug/L	ug/L
Acetone	5.0	4 B	6.8	5.5	6.3	4 J				
Bromobenzene	UJ		UJ	UJ	UJ	UJ	UJ	UJ	UJ	
Bromomethane		UJ						UJ	UJ	
Carbon Disulfide			0.8 J							
2-Chloroethylvinyl Ether	UJ		UJ	UJ	UJ	UJ	UJ	UJ	UJ	UJ
Chloroform										
Chloromethane	UJ		UJ	UJ	UJ	UJ	UJ			
4-Chlorotoluene								UJ	UJ	
1,2-Dibromo-3-Chloropropane								UJ	UJ	

Facility: BLOEDE MANUFACTURING
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ORGANIC ANALYTICAL SAMPLE RESULTS

Analytes:	Sample Number:									
	95041301 SAM	95041302 SAM	95041303 SAM	95041304 SAM	95041305 SAM	95041306 SAM	95041307 FD2	95041308 SAM	95041309 SAM	95041310 SAM
VOA										
NQL FACTOR:	1	1	1	1	1	1	1	1	1	1
UNITS:	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/L	ug/L	ug/L
Methylene Chloride	2 B	1 B	2 B	3 B	2 B	2 B	2 B			0.9 B
Naphthalene	0.7 B	UJ						UJ	UJ	
P-Isopropyltoluene		UJ								
1,1,2,2-Tetrachloroethane		UJ						UJ	UJ	
Tetrachloroethene		UJ								
1,2,3-Trichloropropane		UJ								

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ORGANIC ANALYTICAL SAMPLE RESULTS

Analytes:	Sample Number:								
	95041311 SAM	95041312 FD2	95041313 SAM	95041314 SAM	95041315 SAM	95041316 SAM	95041317 FD2	95041318 FRB	95041319 RIN
			-SA1	2	3	4	5		
Percent Dry Weight (105 C)			82.1	80.7	81.8	75.0	80.8		
BNA									
NQL FACTOR:	1	1	1	1	1.5	1.5	1.2	1	1
UNITS:	ug/L	ug/L	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	ug/L	ug/L
Acenaphthene									
Acenaphthylene									
Anthracene				0.03 J			0.07 J		
Benzo(B)Fluoranthene			0.2 J	0.1 J	0.09 J	0.2 J	0.3 J		
Benzo(a)Anthracene			0.1 J	0.1 J	0.08 J	0.2 J	0.3 J		
Benzo(a)Pyrene			0.2 J	0.09 J	0.1 J	0.1 J	0.3 J		
Benzo(g,h,i)Perylene			0.08 J			0.08 J	0.2 J		
Benzo(k)Fluoranthene			0.2 J	0.08 J	0.1 J	0.1 J	0.3 J		
Benzoic Acid			UJ	UJ	UJ	UJ	UJ	UJ	UJ
Bis(2-Ethylhexyl)Phthalate	3 B		0.1 B		0.4 B	0.2 B	0.4 B		5 J
Butylbenzylphthalate									
Chrysene			0.2 J	0.1 J	0.1 J	0.2 J	0.47		
Di-n-Butylphthalate					0.04 B	0.05 B	0.1 B	2 B	1 B
Dibenzofuran									
4,6-Dinitro-2-Methylphenol									
Fluoranthene			0.36	0.2 J	0.2 J	0.3 J	0.84		
Fluorene							0.04 J		
Indeno(1,2,3-cd)Pyrene			0.08 J			0.08 J	0.2 J		
2-Methylnaphthalene									
Naphthalene									
N-Nitrosodimethylamine									
Phenanthrene			0.2 J	0.1 J	0.09 J	0.1 J	0.48		
Pyrene			0.43	0.2 J	0.2 J	0.3 J	0.76		

Facility: BLOEDE MANUFACTURING
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ORGANIC ANALYTICAL SAMPLE RESULTS

Analytes:	Sample Number:								
	95041311 SAM	95041312 FD2	95041313 SAM SED 1	95041314 SAM 2	95041315 SAM 3	95041316 SAM 4	95041317 FD2 5	95041318 FRB	95041319 RIN
PESTICIDES									
MQL FACTOR:			5		7.5				
UNITS:			ug/Kg		ug/Kg				
Aldrin									
Alpha BHC			0.014 R		0.013				
Alpha Chlordane									
Aroclor 1254									
Beta BHC			0.010						
4,4'-DDE									
4,4'-DDT									
Delta BHC									
Dieldrin									
Endosulfan Sulfate									
Endrin									
Endrin Aldehyde									
Endrin Ketone									
Gamma BHC (Lindane)									
VOA									
MQL FACTOR:	1	1	1	1	1	1	1	1	1
UNITS:	ug/L	ug/L	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/L	ug/L
Acetone									
Bromobenzene	UJ	UJ	UJ	UJ	UJ			UJ	UJ
Bromomethane	UJ	UJ				UJ	UJ	UJ	UJ
Carbon Disulfide									
2-Chloroethylvinyl Ether	UJ	UJ	UJ	UJ	UJ			UJ	UJ
Chloroform	1 J								
Chloromethane			UJ	UJ	UJ				
4-Chlorotoluene	UJ	UJ						UJ	UJ
1,2-Dibromo-3-Chloropropane	UJ	UJ						UJ	UJ

Facility: BLOEDE MANUFACTURING
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ORGANIC ANALYTICAL SAMPLE RESULTS

Analytes:	Sample Number:								
	95041311 SAM	95041312 FD2	95041313 SAM	95041314 SAM	95041315 SAM	95041316 SAM	95041317 FD2	95041318 FRB	95041319 RIN
VOA									
MDL FACTOR:	1	1	1	1	1	1	1	1	1
UNITS:	ug/L	ug/L	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/L	ug/L
Methylene Chloride	0.9 B	0.9 B	2 B	2 B	2 B	2 B	2 B	1 B	0.8 B
Naphthalene	UJ	UJ				UJ	UJ	3 B	UJ
P-Isopropyltoluene						UJ	UJ		
1,1,2,2-Tetrachloroethane	UJ	UJ				UJ	UJ	UJ	UJ
Tetrachloroethene						UJ	UJ		
1,2,3-Trichloropropane						UJ	UJ		

Facility: BLOEDE MANUFACTURING
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ORGANIC QUALITY CONTROL (SURROGATE RECOVERIES)

Surrogates: | Sample Number: | Matrix: SOLIDS

Surrogates:	Surrogate Limits (%)	95041301 SAM (%)	95041302 SAM (%)	95041303 SAM (%)	95041304 SAM (%)	95041305 SAM (%)	95041306 SAM (%)	95041307 FD2 (%)	95041313 SAM (%)	95041314 SAM (%)	95041315 SAM (%)	95041316 SAM (%)
BNA												
2-Fluoro-1,1'-Biphenyl	(30-115)	43	60	57	97	86	61	76	74	48	69	71
2-Fluorophenol	(25-121)	47	66	63	103	96	63	85	67	48	70	71
2,4,6-Tribromophenol	(19-122)	37	49	47	82	66	47	61	62	47	64	65
d14-Terphenyl	(18-137)	54	72	70	122	115	85	114	107	56	85	82
d5-Nitrobenzene	(23-120)	39	57	52	90	72	67	65	77	41	62	62
d5-Phenol	(24-113)	49	73	66	108	101	79	93	89	50	73	75
ORGANICS												
Decachlorobiphenyl	(60-150)	120	124	124	133	125	116	129	121	108	117	105
Tetrachloro-M-Xylene	(60-150)	112	109	112	115	107	110	118	117	94	105	99
VOA												
Bromofluorobenzene	(59-113)	83	78	93	89	88	87	94	96	103	106	113
d4-1,2-Dichloroethane	(70-121)	100	102	100	95	100	103	100	101	99	100	118
d8-Toluene	(84-138)	88	80 A	90	105	95	109	103	95	98	91	111

Facility: BLOEDE MANUFACTURING
Program: SUPERFUND REMOVAL/REMEDIAL

Batch ID: REQ95087
Account #: TFA03N9ZZ

ORGANIC QUALITY CONTROL (SURROGATE RECOVERIES)

Surrogates: Sample Number: Matrix: SOLIDS

	Surrogate Limits (%)	95041317 FD2 (%)
BNA		
2-Fluoro-1,1'-Biphenyl	(30-115)	70
2-Fluorophenol	(25-121)	72
2,4,6-Tribromophenol	(19-122)	64
d14-Terphenyl	(18-137)	79
d5-Nitrobenzene	(23-120)	66
d5-Phenol	(24-113)	77
ORGANICS		
Decachlorobiphenyl	(60-150)	116
Tetrachloro-M-Xylene	(60-150)	109
VOA		
Bromofluorobenzene	(59-113)	112
d4-1,2-Dichloroethane	(70-121)	115
d8-Toluene	(84-138)	112

Facility: BLOEDE MANUFACTURING
Program: SUPERFUND REMOVAL/REMEDIAL

Batch ID: REQ95087
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ORGANIC QUALITY CONTROL (SURROGATE RECOVERIES)

Surrogates: Sample Number: Matrix: WATER

Surrogate	Limits (%)	95041308 SAM (%)	95041309 SAM (%)	95041310 SAM (%)	95041311 SAM (%)	95041312 FD2 (%)	95041318 FRB (%)	95041319 RIN (%)
BNA								
2-Fluoro-1,1'-Biphenyl	(43-116)	74	56	80	78	73	73	74
2-Fluorophenol	(21-110)	87	67	82	84	83	76	65
2,4,6-Tribromophenol	(10-123)	75	57	79	79	74	56	56
d14-Terphenyl	(33-141)	92	77	89	86	94	81	72
d5-Nitrobenzene	(35-114)	71	55	76	73	68	60	57
d5-Phenol	(10-110)	87	68	88	86	85	76	65
ORGANICS								
Decachlorobiphenyl	(60-150)	60	40 A	44 A	34 A	42 A	73	17 A
Tetrachloro-M-Xylene	(60-150)	84	72	77	60	78	79	82
VOA								
Bromofluorobenzene	(86-115)	112	101	120 A	111	98	105	101
d4-1,2-Dichloroethane	(76-114)	99	99	126 A	93	101	97	97
d8-Toluene	(88-110)	111 A	102	96	110	90	100	99

Facility: BLOEDE MANUFACTURING
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ORGANIC Quality Control (Matrix Spike Recoveries)

Matrix Spike Recovery

Matrix: SOLIDS

BNA Matrix Spike Recovery

Compound	Spike Recovery 95041302 MS (%)	Spike Recovery 95041302 MSD (%)	Recovery Limits (SOLIDS) (%)	RPD (%)	RPD Limits (SOLIDS) (%)
Acenaphthene	63	65	31-137	3	19
4-Chloro-3-Methylphenol	56	58	26-103	3	33
2-Chlorophenol	55	55	25-102	0	50
Di-n-Butylphthalate	61	62	11-117	2	40
1,4-Dichlorobenzene	58	52	28-104	11	27
2,4-Dinitrotoluene	66	67	28-89	2	47
N-Nitroso-di-n-Propylamine	54	52	41-126	4	38
4-Nitrophenol	42	43	11-114	2	50
Pentachlorophenol	14 A	21	17-109	40	47
Phenol	60	62	26-90	3	35
Pyrene	69	75	35-142	8	36
1,2,4-Trichlorobenzene	62	59	38-107	5	23

ORGANICS Matrix Spike Recovery

Compound	Spike Recovery 95041302 MS (%)	Spike Recovery 95041302 MSD (%)	Recovery Limits (SOLIDS) (%)	RPD (%)	RPD Limits (SOLIDS) (%)
Aldrin	98	93	34-132	5	43
4,4'-DDT	85	78	23-134	9	50
Dieldrin	129	122	31-134	5	38
Endrin	116	121	42-139	4	45
Gamma BHC (Lindane)	88	103	46-127	15	50
Heptachlor	109	108	35-130	0	31

VOA Matrix Spike Recovery

Compound	Spike Recovery 95041302 MS (%)	Spike Recovery 95041302 MSD (%)	Recovery Limits (SOLIDS) (%)	RPD (%)	RPD Limits (SOLIDS) (%)
Benzene	114	113	66-142	1	21
Chlorobenzene	104	104	60-133	0	21
1,1-Dichloroethene	130	134	59-172	3	22
Toluene	116	116	59-139	0	21
Trichloroethene	96	100	62-137	4	24

Facility: BLOEDE MANUFACTURING
Program: SUPERFUND REMOVAL/REMEDIAL

Batch ID: REQ95087
Account #: TFA03N9ZZ

ORGANIC Quality Control (Matrix Spike Recoveries)

Matrix Spike Recovery

Matrix: WATER

BNA Matrix Spike Recovery

Compound	Spike Recovery 95041311 MS (%)	Spike Recovery 95041311 MSD (%)	Recovery Limits (WATER) (%)	RPD (%)	RPD Limits (WATER) (%)
Acenaphthene	75	70	46-118	7	31
4-Chloro-3-Methylphenol	70	68	23-97	3	42
2-Chlorophenol	72	71	27-123	1	40
Di-n-Butylphthalate	72	69	11-117	4	40
1,4-Dichlorobenzene	73	67	36-97	9	28
2,4-Dinitrotoluene	86	79	24-96	8	38
N-Nitroso-di-n-Propylamine	59	54	41-116	9	38
4-Nitrophenol	62	63	10-80	2	50
Pentachlorophenol	66	65	9-103	2	50
Phenol	70	71	12-110	1	42
Pyrene	88	85	26-127	3	31
1,2,4-Trichlorobenzene	71	66	39-98	7	28

ORGANICS Matrix Spike Recovery

Compound	Spike Recovery 95041311 MS (%)	Spike Recovery 95041311 MSD (%)	Recovery Limits (WATER) (%)	RPD (%)	RPD Limits (WATER) (%)
Aldrin	57	68	40-120	18	22
4,4'-DDT	57	68	38-127	18	27
Dieldrin	72	84	52-126	16	18
Endrin	72	85	56-121	16	21
Gamma BHC (Lindane)	69	81	56-123	16 A	15
Heptachlor	62	74	40-131	17	20

VOA Matrix Spike Recovery

Compound	Spike Recovery 95041311 MS (%)	Spike Recovery 95041311 MSD (%)	Recovery Limits (WATER) (%)	RPD (%)	RPD Limits (WATER) (%)
Benzene	97	102	76-127	5	11
Chlorobenzene	104	102	75-130	2	13
1,1-Dichloroethene	97	98	61-145	1	14
Toluene	100	104	76-125	4	13
Trichloroethene	101	102	71-120	1	14

Central Regional Laboratory - Region III
Extractable Organics Analysis
Nominal Quantitation Limits (NQL)

Units: Solids =mg/kg (wet) NPTC =Non-Priority Pollutant Target Compound

Actual Quantitation Limit =(NQL Factor) X NQL

CAS	ANALYTE	NQL
62-75-9	N-Nitrosodimethylamine	0.33
108-95-2	Phenol	0.33
62-53-34	Aniline NPTC	0.33
111-44-4	bis(2-Chloroethyl)Ether	0.33
95-57-8	2-Chlorophenol	0.33
541-73-1	1,3-Dichlorobenzene	0.33
106-46-7	1,4-Dichlorobenzene	0.33
100-51-6	Benzyl Alcohol NPTC	0.33
95-50-1	1,2-Dichlorobenzene	0.33
95-48-7	2-Methylphenol NPTC	0.33
108-60-1	bis(2-chloroisopropyl)Ether	0.33
106-44-5	4-Methylphenol NPTC	0.33
:1-64-7	N-Nitroso-di-n-Propylamine	0.33
67-72-1	Hexachloroethane	0.33
98-95-3	Nitrobenzene	0.33
78-59-1	Isophorone	0.33
88-75-5	2-Nitrophenol	0.33
105-67-9	2,4-Dimethylphenol	0.33
65-85-0	Benzoic Acid NPTC	1.67
111-91-1	bis(2-Chloroethoxy)Methane	0.33
120-83-2	2,4-Dichlorophenol	0.33
120-82-1	1,2,4-Trichlorobenzene	0.33
91-20-3	Naphthalene	0.33
106-47-8	4-Chloroaniline NPTC	0.33
87-68-3	Hexachlorobutadiene	0.33
50-7	4-Chloro-3-Methylphenol	0.33
91-57-6	2-Methylnaphthalene NPTC	0.33
77-47-4	Hexachlorocyclopentadiene	0.33
88-06-2	2,4,6-Trichlorophenol	0.33
95-95-4	2,4,5-Trichlorophenol NPTC	1.67
91-58-7	2-Chloronaphthalene	0.33
88-74-4	2-Nitroaniline NPTC	1.67
131-11-3	Dimethylphthalate	0.33
208-96-8	Acenaphthylene	0.33

CAS NUMBER	ANALYTE	NQL
99-09-2	3-Nitroaniline NPTC	1.67
83-32-9	Acenaphthene	0.33
51-28-5	2, 4-Dinitrophenol	1.67
100-02-7	4-Nitrophenol	1.67
132-64-9	Dibenzofuran NPTC	0.33
606-20-2	2,6-Dinitrotoluene	0.33
121-14-2	2,4-Dinitrotoluene	0.33
84-66-2	Diethylphthalate	0.33
7005-72-3	4-Chlorophenylphenylether	0.33
86-73-7	Fluorene	0.33
100-01-6	4-Nitroaniline NPTC	1.67
86-30-6	N-Nitrosodiphenylamine(1)	0.33
534-52-1	4,6-Dinitro-2-Methylphenol	1.67
101-55-3	4-Bromophenylphenylether	0.33
118-74-1	Hexachlorobenzene	0.33
87-86-5	Pentachlorophenol	1.67
85-01-8	Phenanthrene	0.33
120-12-7	Anthracene	0.33
86-74-8	Carbazole NPTC	0.33
84-74-2	Di-n-Butylphthalate	0.33
206-44-0	Fluoranthene	0.33
92-87-5	Benzidine	1.67
129-00-0	Pyrene	0.33
85-68-7	Butylbenzylphthalate	0.33
91-94-1	3,3'-Dichlorobenzidine	0.67
56-55-3	Benzo(a)Anthracene	0.33
117-81-7	bis(2-Ethylhexyl)Phthalate	0.33
218-01-9	Chrysene	0.33
117-84-0	Di-n-Octylphthalate	0.33
205-99-2	Benzo(b)Fluoranthene	0.33
207-08-9	Benzo(k)Fluoranthene	0.33
50-32-8	Benzo(a)Pyrene	0.33
193-39-5	Indeno(1,2,3-cd)Pyrene	0.33
53-70-3	Dibenzo(a,h)Anthracene	0.33
191-24-2	Benzo(g,h,i)Perylene	0.33

The "Nominal Quantitation Limit" factor is an overall correction factor applied to the method's NQL's for analytical adjustments made during the analysis (i.e., for extractions of more or less than the ideal 30 grams for soil samples, for sample extracts not concentrated to 1.00 ml due to excessive foaming/darkness of the extract, and for sample extract dilutions prior to analysis). For example, the typical NQL factor for a CRL soil sample is 1.5. *Therefore, the estimated Actual Quantitation Limit for Phenol would be 0.50 mg/Kg (i.e., 1.5 x .33 mg/Kg).*

(1) Cannot be separated from diphenylamine.

Central Regional Laboratory - Region III
Extractable Organics Analysis
Nominal Quantitation Limits (NQL)

Units: Water =ug/L NPTC =Non-Priority Pollutant Target Compound

Actual Quantitation Limit =(NQL Factor) X NQL

CAS	ANALYTE	NQL
62-75-9	N-Nitrosodimethylamine	10
108-95-2	Phenol	10
62-53-34	Aniline NPTC	10
111-44-4	bis(2-Chloroethyl)Ether	10
95-57-8	2-Chlorophenol	10
541-73-1	1,3-Dichlorobenzene	10
106-46-7	1,4-Dichlorobenzene	10
100-51-6	Benzyl Alcohol NPTC	10
95-50-1	1,2-Dichlorobenzene	10
95-48-7	2-Methylphenol NPTC	10
108-60-1	bis(2-chloroisopropyl)Ether	10
106-44-5	4-Methylphenol NPTC	10
621-64-7	N-Nitroso-di-n-Propylamine	10
67-72-1	Hexachloroethane	10
98-95-3	Nitrobenzene	10
78-59-1	Isophorone	10
88-75-5	2-Nitrophenol	10
105-67-9	2,4-Dimethylphenol	10
65-85-0	Benzoic Acid NPTC	50
111-91-1	bis(2-Chloroethoxy)Methane	10
120-83-2	2,4-Dichlorophenol	10
120-82-1	1,2,4-Trichlorobenzene	10
91-20-3	Naphthalene	10
106-47-8	4-Chloroaniline NPTC	10
87-68-3	Hexachlorobutadiene	10
59-50-7	4-Chloro-3-Methylphenol	10
91-57-6	2-Methylnaphthalene NPTC	10
77-47-4	Hexachlorocyclopentadiene	10
88-06-2	2,4,6-Trichlorophenol	10
95-95-4	2,4,5-Trichlorophenol NPTC	50
91-58-7	2-Chloronaphthalene	10
88-74-4	2-Nitroaniline NPTC	50
131-11-3	Dimethylphthalate	10
208-96-8	Acenaphthylene	10

CAS	ANALYTE	NQL
99-09-2	3-Nitroaniline NPTC	50
83-32-9	Acenaphthene	10
51-28-5	2, 4-Dinitrophenol	50
100-02-7	4-Nitrophenol	50
132-64-9	Dibenzofuran NPTC	10
606-20-2	2,6-Dinitrotoluene	10
121-14-2	2,4-Dinitrotoluene	10
84-66-2	Diethylphthalate	10
7005-72-3	4-Chlorophenylphenylether	10
86-73-7	Fluorene	10
100-01-6	4-Nitroaniline NPTC	50
86-30-6	N-Nitrosodiphenylamine(1)	10
534-52-1	4,6-Dinitro-2-Methylphenol	50
101-55-3	4-Bromophenylphenylether	10
118-74-1	Hexachlorobenzene	10
87-86-5	Pentachlorophenol	50
85-01-8	Phenanthrene	10
120-12-7	Anthracene	10
86-74-8	Carbazole NPTC	10
84-74-2	Di-n-Butylphthalate	10
206-44-0	Fluoranthene	10
92-87-5	Benzidine	50
129-00-0	Pyrene	10
85-68-7	Butylbenzylphthalate	10
91-94-1	3,3'-Dichlorobenzidine	20
56-55-3	Benzo(a)Anthracene	10
117-81-7	bis(2-Ethylhexyl)Phthalate	10
218-01-9	Chrysene	10
117-84-0	Di-n-Octylphthalate	10
205-99-2	Benzo(b)Fluoranthene	10
207-08-9	Benzo(k)Fluoranthene	10
50-32-8	Benzo(a)Pyrene	10
193-39-5	Indeno(1,2,3-cd)Pyrene	10
53-70-3	Dibenzo(a,h)Anthracene	10
191-24-23	Benzo (g,h,i)Perylene	10

The "Nominal Quantitation Limit" factor is an overall correction factor applied to the method's NQL's for analytical adjustments made during the analysis (i.e., for extractions of more or less than the ideal 30 grams for soil samples, for sample extracts not concentrated to 1.00 ml due to excessive foaming/darkness of the extract, and for sample extract dilutions prior to analysis). For example, the typical NQL factor for a CRL soil sample is 1.5. Therefore, the estimated Actual Quantitation Limit for Phenol would be 0.50 mg/Kg (i.e., 1.5 x .33 mg/Kg).

(1) Cannot be separated from diphenylamine.

Central Regional Laboratory - Region III
Pesticide and PCB Analysis
Nominal Quantitation Limits (NQL)

Units: Solids =mg/kg NPTC =Non-Priority Pollutant Target Compound

Actual Quantitation Limit =(NQL Factor) X NQL

CAS Number	Pesticide	NQL
319-84-6	Alpha-BHC	0.002
319-85-7	Beta-BHC	0.002
319-86-8	Delta-BHC	0.002
58-89-8	Gamma-BHC	0.002
76-44-8	Heptachlor	0.002
309-00-2	Aldrin	0.002
1024-57-3	Heptachlor Epoxide	0.002
959-98-8	Endosulfan I	0.002
60-57-1	Dieldrin	0.003
72-55-9	4,4'-DDE	0.003
72-20-8	Endrin	0.003
33213-65-9	Endosulfan II	0.003
72-54-8	4,4'-DDD	0.003
1031-07-8	Endosulfan Sulfate	0.003
50-29-3	4,4'-DDT	0.003
7421-93-4	Endrin Aldehyde	0.003
53494-70-5	Endrin Ketone (NPTC)	0.003
72-43-5	Methoxychlor (NPTC)	0.017
5103-71-9	Alpha-Chlordane	0.002
5103-74-2	Gamma-Chlordane	0.002
57-74-9	Chlordane	0.033
8001-35-2	Toxaphene	0.167

CAS Number	PCB	NQL
12674-11-2	Aroclor-1016	0.033
1104-28-2	Aroclor-1221	0.067
11141-16-5	Aroclor-1232	0.033
53469-21-9	Aroclor-1242	0.033
12672-29-6	Aroclor-1248	0.033
11097-69-1	Aroclor-1254	0.033
11096-82-5	Aroclor-1260	0.033

The "Nominal Quantitation Limit" listed for each target compound is based on the Superfund CLP Protocol. The Actual Quantitation Limits are related to the NQLs by the NQL Factor. This NQL Factor reflects procedural steps, e.g., extract dilution, which influence quantitation limits.

Central Regional Laboratory - Region III
Pesticide and PCB Analysis
Nominal Quantitation Limits (NQL)

Units: Water =ug/L NPTC =Non-Priority Pollutant Target Compound

Actual Quantitation Limit =(NQL Factor) X NQL

CAS Number	Pesticide	NQL
319-84-6	Alpha-BHC	0.05
319-85-7	Beta-BHC	0.05
319-86-8	Delta-BHC	0.05
58-89-8	Gamma-BHC	0.05
76-44-8	Heptachlor	0.05
309-00-2	Aldrin	0.05
1024-57-3	Heptachlor Epoxide	0.05
959-98-8	Endosulfan I	0.05
60-57-1	Dieldrin	0.10
72-55-9	4,4'-DDE	0.10
72-20-8	Endrin	0.10
33213-65-9	Endosulfan II	0.10
72-54-8	4,4'-DDD	0.10
1031-07-8	Endosulfan Sulfate	0.10
50-29-3	4,4'-DDT	0.10
7421-93-4	Endrin Aldehyde	0.10
53494-70-5	Endrin Ketone (NPTC)	0.10
72-43-5	Methoxychlor (NPTC)	0.05
5103-71-9	Alpha-Chlordane	0.05
5103-74-2	Gamma-Chlordane	0.05
57-74-9	Chlordane	1.0
8001-35-2	Toxaphene	5.0

CAS Number	PCB	NQL
12674-11-2	Aroclor-1016	1.0
1104-28-2	Aroclor-1221	2.0
11141-16-5	Aroclor-1232	1.0
53469-21-9	Aroclor-1242	1.0
12672-29-6	Aroclor-1248	1.0
11097-69-1	Aroclor-1254	1.0
11096-82-5	Aroclor-1260	1.0

The "Nominal Quantitation Limit" listed for each target compound is based on the Superfund CLP Protocol. The Actual Quantitation Limits are related to the NQLs by the NQL Factor. This NQL Factor reflects procedural steps, e.g., extract dilution, which influence quantitation limits.

Central Regional Laboratory - Region III
Volatile Organics Analysis
Nominal Quantitation Limits (NQL)

Units: Solids =ug/kg (wet) NPTC =Non-Priority Pollutant Target Compound

Actual Quantitation Limit =(NQL Factor) X NQL

CAS #	ANALYTE		NQL
75-71-8	Dichlorodifluoromethane		5
74-87-3	Chloromethane		5
75-01-4	Vinyl Chloride		5
74-83-9	Bromomethane		5
75-00-3	Chloroethane		5
75-69-4	Trichlorofluoromethane		5
75-35-4	1,1-Dichloroethene		5
75-15-0	Carbon Disulfide	NPTC	5
67-64-1	Acetone	NPTC	5
75-09-2	Methylene Chloride		5
156-60-5	trans-1,2-Dichloroethene		5
75-34-3	1,1-Dichloroethane		5
108-05-4	Vinyl Acetate	NPTC	5
590-20-7	2,2-Dichloropropane		5
156-59-4	cis-1,2-Dichloroethene	NPTC	5
78-93-3	2-Butanone	NPTC	5
74-97-5	Bromochloromethane	NPTC	5
65-66-3	Chloroform		5
71-55-6	1,1,1-Trichloroethane		5
56-23-5	Carbon Tetrachloride		5
563-58-6	1,1-Dichloro-1-propene		5
71-43-2	Benzene		5
107-06-2	1,2-Dichloroethane		5
79-01-6	Trichloroethene		5
78-87-5	1,2-Dichloropropane		5
74-95-3	Dibromomethane	NPTC	5
75-27-4	Bromodichloromethane		5
110-75-8	2-Chloroethylvinyl ether		5
10061-01-6	trans-1,3-Dichloropropene	NPTC	5
108-10-1	4-Methyl-2-pentanone	NPTC	5
108-83-3	Toluene		5
10061-01-5	cis-1,3-Dichloropropene		5
79-00-5	1,1,2-Trichloroethane		5
127-18-4	Tetrachloroethene		5

CAS #	ANALYTE		NQL
142-28-9	1,3-Dichloropropane	NPTC	5
591-78-6	2-Hexanone	NPTC	5
124-48-1	Dibromochloromethane		5
106-93-4	1,2-Dibromoethane(EDB)	NPTC	5
108-90-7	Chlorobenzene		5
630-20-6	1,1,1,2-Tetrachloroethane	NPTC	5
100-41-4	Ethylbenzene		5
108-38-3	m-Xylene	NPTC	5
106-42-3	p-Xylene	NPTC	5
95-47-6	o-Xylene	NPTC	5
100-42-5	Styrene	NPTC	5
75-25-2	Bromoform		5
98-82-8	Isopropylbenzene	NPTC	5
108-86-1	Bromobenzene	NPTC	5
79-34-5	1,1,2,2-Tetrachloroethane		5
96-18-4	1,2,3-Trichloropropane	NPTC	5
103-65-1	n-Propylbenzene	NPTC	5
95-49-8	2-Chlorotoluene	NPTC	5
106-43-4	4-Chlorotoluene	NPTC	5
108-67-8	1,3,5-Trimethylbenzene	NPTC	5
98-06-6	tert-Butylbenzene	NPTC	5
93-63-6	1,2,4-Trimethylbenzene	NPTC	5
135-98-8	sec-Butylbenzene	NPTC	5
541-73-1	1,3-Dichlorobenzene		5
106-46-7	1,4-Dichlorobenzene		5
99-87-6	p-Isopropyltoluene	NPTC	5
95-50-1	1,2-Dichlorobenzene		5
104-51-8	n-Butylbenzene	NPTC	5
96-12-8	1,2-Dibromo-3-chloropropane		5
120-82-1	1,2,4-Trichlorobenzene		5
91-20-3	Naphthalene		5
87-68-3	Hexachlorobutadiene		5
87-61-6	1,2,3-Trichlorobenzene	NPTC	5

The "Nominal Quantitation Limit" factor is an overall correction factor applied to the method's NQLs for analytical adjustments made during the analysis (i.e., for analyses of more or less than the ideal 5 grams for soil samples, and for sample dilutions prior to analysis). For example, if the NQL factor for a CRL soil sample is 2, the estimated Actual Quantitation Limit for vinyl chloride would be 10 ug/kg (i.e., 2 x 5 ug/Kg).

Central Regional Laboratory - Region III
Volatile Organics Analysis
Nominal Quantitation Limits (NQL)

Units: Water =ug/L NPTC =Non-Priority Pollutant Target Compound

Actual Quantitation Limit =(NQL Factor) X NQL

CAS #	ANALYTE		NQL
75-71-8	Dichlorodifluoromethane		5
74-87-3	Chloromethane		5
75-01-4	Vinyl Chloride		5
74-83-9	Bromomethane		5
75-00-3	Chloroethane		5
75-69-4	Trichlorofluoromethane		5
75-35-4	1,1-Dichloroethene		5
75-15-0	Carbon Disulfide	NPTC	5
67-64-1	Acetone	NPTC	5
75-09-2	Methylene Chloride		5
156-60-5	trans-1,2-Dichloroethene		5
-34-3	1,1-Dichloroethane		5
108-05-4	Vinyl Acetate	NPTC	5
590-20-7	2,2-Dichloropropane		5
156-59-4	cis-1,2-Dichloroethene	NPTC	5
78-93-3	2-Butanone	NPTC	5
74-97-5	Bromochloromethane	NPTC	5
65-66-3	Chloroform		5
71-55-6	1,1,1-Trichloroethane		5
56-23-5	Carbon Tetrachloride		5
563-58-6	1,1-Dichloro-1-propene		5
71-43-2	Benzene		5
107-06-2	1,2-Dichloroethane		5
79-01-6	Trichloroethene		5
37-5	1,2-Dichloropropane		5
74-95-3	Dibromomethane	NPTC	5
75-27-4	Bromodichloromethane		5
110-75-8	2-Chloroethylvinyl ether		5
10061-01-6	trans-1,3-Dichloropropene	NPTC	5
108-10-1	4-Methyl-2-pentanone	NPTC	5
108-83-3	Toluene		5
10061-01-5	cis-1,3-Dichloropropene		5
79-00-5	1,1,2-Trichloroethane		5
127-18-4	Tetrachloroethene		5

CAS #	ANALYTE		NQL
142-28-9	1,3-Dichloropropane	NPTC	5
591-78-6	2-Hexanone	NPTC	5
124-48-1	Dibromochloromethane		5
106-93-4	1,2-Dibromoethane(EDB)	NPTC	5
108-90-7	Chlorobenzene		5
630-20-6	1,1,1,2-Tetrachloroethane	NPTC	5
100-41-4	Ethylbenzene		5
108-38-3	m-Xylene	NPTC	5
106-42-3	p-Xylene	NPTC	5
95-47-6	o-Xylene	NPTC	5
100-42-5	Styrene	NPTC	5
75-25-2	Bromoform		5
98-82-81	Isopropylbenzene	NPTC	5
108-86-1	Bromobenzene	NPTC	5
79-34-5	1,1,2,2-Tetrachloroethane		5
96-18-4	1,2,3-Trichloropropane		5
103-65-1	n-Propylbenzene	NPTC	5
95-49-8	2-Chlorotoluene	NPTC	5
106-43-4	4-Chlorotoluene	NPTC	5
108-67-8	1,3,5-Trimethylbenzene	NPTC	5
98-06-6	tert-Butylbenzene	NPTC	5
93-63-6	1,2,4-Trimethylbenzene	NPTC	5
135-98-8	sec-Butylbenzene	NPTC	5
541-73-1	1,3-Dichlorobenzene		5
106-46-7	1,4-Dichlorobenzene		5
99-87-6	p-Isopropyltoluene	NPTC	5
95-50-1	1,2-Dichlorobenzene		5
104-51-8	n-Butylbenzene	NPTC	5
96-12-8	1,2-Dibromo-3-chloropropane		5
120-82-1	1,2,4-Trichlorobenzene		5
91-20-3	Naphthalene		5
87-68-3	Hexachlorobutadiene		5
87-61-6	1,2,3-Trichlorobenzene	NPTC	5

The "Nominal Quantitation Limit" factor is an overall correction factor applied to the method's NQLs for analytical adjustments made during the analysis (i.e., for analyses of more or less than the ideal 5 grams for soil samples, and for sample dilutions prior to analysis). For example, if the NQL factor for a CRL water sample is 2, the estimated Actual Quantitation Limit for vinyl chloride would be 10 ug/L (i.e., 2 x 5 ug/L).

U.S. EPA Region III
Central Regional Laboratory
Annapolis, Maryland

Facility: BLOEDE MANUFACTURING
Program : SUPERFUND REMOVAL/REMEDIAL

Batch ID: REQ95087
Account #: TFA03N9ZZ

LRB RESULTS REPORT

Service Group : BNA

Instrument Run: OI955181

Control Type	Event Number
LRB	24

Analyte	Correction Factor	Final Result	Units
2-Fluorophenol	1	69	% REC
d5-Phenol	1	68	% REC
d5-Nitrobenzene	1	57	% REC
2-Fluoro-1,1'-Biphenyl	1	69	% REC
2,4,6-Tribromophenol	1	50	% REC
d14-Terphenyl	1	80	% REC
Benzoic Acid	1	UJ	ug/L
Di-n-Butylphthalate	1	2 J	ug/L

Control Type	Event Number
LRB	25

Analyte	Correction Factor	Final Result	Units
2-Fluorophenol	1	56	% REC
d5-Phenol	1	72	% REC
d5-Nitrobenzene	1	69	% REC
2-Fluoro-1,1'-Biphenyl	1	74	% REC
2,4,6-Tribromophenol	1	28	% REC
d14-Terphenyl	1	82	% REC
N-Nitrosodimethylamine	1	UJ	mg/Kg
4,6-Dinitro-2-Methylphenol	1	UJ	mg/Kg
Di-n-Butylphthalate	1	0.08 J	mg/Kg

U.S. EPA Region III
Central Regional Laboratory
Annapolis, Maryland

Facility: BLOEDE MANUFACTURING
Program : SUPERFUND REMOVAL/REMEDIAL

Batch ID: REQ95087
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LRB RESULTS REPORT

Service Group : ORGANICS

Instrument Run: OC950413

Control Type	Event Number
LRB	1

Analyte	Correction Factor	Final Result	Units
Tetrachloro-M-Xylene	1	64	% REC
Decachlorobiphenyl	1	69	% REC

Instrument Run: OC950420

Control Type	Event Number
LRB	1

Analyte	Correction Factor	Final Result	Units
Tetrachloro-M-Xylene	1	104	% REC
Decachlorobiphenyl	1	123	% REC

Facility: BLOEDE MANUFACTURING
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LRB RESULTS REPORT

Service Group : VOA

Instrument Run: OH955181

Control Type	Event Number
LRB	24

Analyte	Correction Factor	Final Result	Units
d4-1,2-Dichloroethane	1	120 A	% REC
d8-Toluene	1	100	% REC
Bromofluorobenzene	1	121 A	% REC
Methylene Chloride	1	0.8 J	ug/L
2-Chloroethylvinyl Ether	1	UJ	ug/L
Naphthalene	1	1 J	ug/L

Control Type	Event Number
LRB	25

Analyte	Correction Factor	Final Result	Units
d4-1,2-Dichloroethane	1	103	% REC
d8-Toluene	1	117	% REC
Bromofluorobenzene	1	106	% REC
Chloromethane	1	UJ	ug/Kg
Methylene Chloride	1	1 J	ug/Kg
2-Chloroethylvinyl Ether	1	UJ	ug/Kg
Bromobenzene	1	UJ	ug/Kg
Naphthalene	1	0.7 J	ug/Kg

Control Type	Event Number
LRB	26

Analyte	Correction Factor	Final Result	Units
d4-1,2-Dichloroethane	1	115	% REC
d8-Toluene	1	105	% REC
Bromofluorobenzene	1	114 A	% REC
Bromomethane	1	UJ	ug/Kg
Acetone	1	5.2	ug/Kg
Methylene Chloride	1	1 J	ug/Kg
2-Butanone	1	2 J	ug/Kg
Tetrachloroethene	1	UJ	ug/Kg
1,1,2,2-Tetrachloroethane	1	UJ	ug/Kg

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LRB RESULTS REPORT

1,2,3-Trichloropropane	1	UJ	ug/Kg
P-Isopropyltoluene	1	UJ	ug/Kg
Naphthalene	1	UJ	ug/Kg

Control Type	Event Number
LRB	27

Analyte	Correction Factor	Final Result	Units
d4-1,2-Dichloroethane	1	100	% REC
d8-Toluene	1	115 A	% REC
Bromofluorobenzene	1	112	% REC
Bromomethane	1	UJ	ug/L
Methylene Chloride	1	0.8 J	ug/L
2-Butanone	1	17.6	ug/L
2-Chloroethylvinyl Ether	1	UJ	ug/L
Bromobenzene	1	UJ	ug/L
1,1,2,2-Tetrachloroethane	1	UJ	ug/L
4-Chlorotoluene	1	UJ	ug/L
1,2-Dibromo-3-Chloropropane	1	UJ	ug/L
Naphthalene	1	3 J	ug/L

Control Type	Event Number
LRB	28

Analyte	Correction Factor	Final Result	Units
d4-1,2-Dichloroethane	1	122 A	% REC
d8-Toluene	1	124	% REC
Bromofluorobenzene	1	110	% REC
Dichlorodifluoromethane	1	UJ	ug/Kg
Chloromethane	1	UJ	ug/Kg
Bromomethane	1	UJ	ug/Kg
Acetone	1	8.7	ug/Kg
Methylene Chloride	1	2 J	ug/Kg
2-Chloroethylvinyl Ether	1	UJ	ug/Kg
2-Chlorotoluene	1	UJ	ug/Kg
Naphthalene	1	0.8 J	ug/Kg

GC/MS EXTRACTABLE ANALYSIS

Analyst:

Hoang Nguyen
Chemist/Lockheed

TID #: 03950452

Method :

The twelve (12) soil and seven (7) aqueous samples from the Bloede Manufacturing site were analyzed for the presence of organic compounds listed as extractable Priority Pollutants and CLP Hazardous Substances List Compounds. The samples were collected on April 12, 1995. The aqueous samples were extracted by the continuous liquid/liquid extraction method on April 13, 1995. The soil samples were extracted by the soxhlet method on April 17, 1995. These samples were analyzed on April 21, May 01, 02, 08 and 09, 1995 following SOP# R3-QA211.0. This SOP is a consolidated method derived from the Superfund Contract Laboratory Program Statement of Work and from RCRA methodology (SW-846). Instrumentation utilized consisted of a Hewlett Packard (HP) 5970 MSD coupled to a HP 5890 Series II gas chromatograph equipped with an HP-7673A autosampler and SPB-5 30 meter capillary column. Concentrations of compounds were determined using the relative response of authentic standards to the closest internal standard. The soil concentration results are reported on a wet weight basis. These values have been reported in the RLIMS Final Report. Only those compounds for which results are reported were detected. Sample target compound values outside the calibration range were labeled with a "J". This indicates that the mass spectrum obtained for the sample met the identification criteria, yet the quantity present was outside the range for which the instrument accurately quantitates. All results qualified with a "J" are estimated quantities. The NQLs (nominal quantitation limits) are the quantitation limits that have been determined for each parameter analyzed by this method. The actual quantitation limit for a sample reflects the NQL as well as any dilution/concentration factor specific for each sample. The NQL factor for all aqueous samples is equal to 1. Sample extraction volume for all seven (7) aqueous samples was 1 liter. Due to the nature of the samples and limitations of the soxhlet apparatus, the amount of some soil samples used for extraction was limited to either twenty (20) or twenty-five (25) grams. Furthermore, some of the samples could not be concentrated down to 1ml of final volume. The NQL factors, sample weights, dilutions and final volumes are listed below for the twelve (12) soil samples:

Samples	Sample Weight	Final Volume	Dilution	NQL Factor
950413-01	30g	2ml	1X	2
950413-02	30g	1ml	1X	1
950413-02MS	30g	1ml	1X	1
950413-02MSD	30g	1ml	1X	1
950413-03	20g	1ml	1X	1.5
950413-04	30g	3ml	1X	3
950413-05	30g	2ml	1X	2
950413-06	30g	1ml	1X	1
950413-07	20g	1ml	1X	1.5
950413-13	30g	1ml	1X	1
950413-14	30g	1ml	1X	1
950413-15	20g	1ml	1X	1.5
950413-16	20g	1ml	1X	1.5
950413-17	25g	1ml	1X	1.2

Sample 950413-01 was also analyzed at a 2X dilution to bring phenanthrene, fluoranthene and pyrene within the calibration range of the curve. The "C" qualifier was applied to these compounds.

The samples were also examined for the presence of compounds in addition to those on the Target Compound list. Authentic standards were not available to verify these tentatively identified compounds (TIC) results. Tentative identification of these compounds was made by the comparison of sample spectra to the EPA/NBS54K Mass Spectral Library. Concentrations for these compounds were estimated based on the response of the closest internal standard and the assumption that the instrument response for a given tentative compound was the same as the instrument response for the internal standards. These identifications have been reported as tentative identifications with the associated quantitation values reported as estimated concentrations and qualified with a "T". The TICs in all sample extracts have been corrected for any blank contamination.

Quality Control:

Before acquisition of any sample data, the mass spectrometer is calibrated using FC43. The calibration is verified by obtaining the spectrum of a known compound (DFTPP). All mass assignments and relative abundances are found to be in acceptable ranges or the instrument is adjusted until an acceptable spectrum of the known is obtained.

Immediately before analysis, each sample is spiked with an internal standard mix obtained commercially containing D4-1,4-dichlorobenzene, D8-naphthalene, D10-acenaphthene, D10-phenanthrene, D12-chrysene and D12-perylene. All quantitations or estimates of concentration are made in comparison to the internal standard nearest to the compound of interest.

Quantitation was based on the 50 ng/ul standard. The initial calibration consisted of a five (5) point calibration (10, 20, 50, 80 and 100 ng/ul) except for benzoic acid, 2,4-dinitrophenol and pentachlorophenol on April 21, 1995 and except for 2,4-dinitrophenol on May 01, 1995 which consisted of a four (4) point calibration (20, 50, 80 and 100 ng/ul). The percent relative standard deviation (%RSD) for all compounds in the initial calibration of the instrument on April 21 and May 08, 1995 was below thirty (30) percent except for benzoic acid. The percent relative standard deviation (%RSD) for all compounds in the initial calibration of the instrument on May 01, 1995 was below thirty (30) percent. The percent difference (%D) for all compounds in the continuing calibration check standard on May 02, 1995 was below twenty-five (25) percent except for n-nitroso-dimethylamine and 4,6-dinitro-2-methylphenol when comparing the daily calibration standard to the initial calibration curve. The percent difference (%D) for all compounds in the continuing calibration check standards on May 09, 1995 was below twenty-five (25) percent except for benzoic acid when comparing the daily calibration standard to the initial calibration curve. These compounds are qualified "J", estimated, for the positive results and "UJ", undetected estimated, for non-detected results in the affected samples.

For each group of samples extracted, a method blank is prepared and examined for laboratory introduced contamination. Only target compounds in the samples with values less than or equal to ten times (<10X) the method blank, field blank, rinsate blank and/or equipment blank are reported with a "B" qualifier.

The samples were spiked with a mixture of six (6) surrogate compounds prior to extraction. Recovery for each was determined to check for matrix effect. All surrogate recoveries were within Q.C. limits. The target limits are those established for the CLP.

Two (2) aliquots of soil sample 950413-02 and aqueous sample 950413-11 were spiked with a priority pollutant cocktail mix containing twelve compounds at 100 ng/uL for acids and 50 ng/uL for base/neutrals (in the extract) and carried through the extraction and GC/MS. All matrix spike recoveries and all %RPDs for the aqueous matrix were within acceptable limits. Twenty-three (23) out of

twenty-four (24) matrix spike recoveries and all %RPDs for the soil matrix were within acceptable limits. The outlier was qualified "A".

TENTATIVELY IDENTIFIED COMPOUNDS

Site: Bloede Manufacturing
Program: Superfund Removal/Remedial

UNITS: mg/Kg

SAMPLE NO.	CAS #	TIC NAME	RT	CONC
950413-01	******	Unknown m/z = 43	11.20	1 T
	******	Unknown m/z = 180	24.96	0.3 T
	******	Unknown m/z = 189	27.17	0.5 T
	84651	9,10-Anthracenedione	27.65	0.9 T
	81845	1,8-Naphthalic anhydride	28.30	0.3 T
	******	Unknown PNA m/z = 216	29.62	0.4 T
	******	Unknown PNA m/z = 216	29.86	0.4 T
	******	Unknown PNA m/z = 216	30.11	0.5 T
	******	Unknown m/z = 230	31.14	0.5 T
	******	Unknown m/z = 234	31.45	0.4 T
	******	Unknown m/z = 43	35.95	0.4 T
	******	Unknown PNA m/z = 252	36.67	0.5 T
	******	Unknown PNA m/z = 252	37.49	2 T
	******	Unknown alkane m/z = 57	39.63	0.6 T

UNITS: mg/Kg

SAMPLE NO.	CAS #	TIC NAME	RT	CONC
950413-02	******	Unknown m/z = 41	6.82	0.1 T
	******	Unknown m/z = 43	11.21	0.8 T
	******	Unknown m/z = 192	27.16	0.2 T
	******	Unknown PNA m/z = 216	30.36	0.1 T

UNITS: mg/Kg

SAMPLE NO.	CAS #	TIC NAME	RT	CONC
950413-03	******	Unknown m/z = 41	6.82	0.6 T
	******	Unknown m/z = 43	11.20	2 T
	******	Unknown m/z = 43	12.22	0.3 T
	******	Unknown m/z = 43	13.08	0.3 T
	******	Unknown alkane m/z = 57	31.35	0.3 T
	******	Unknown alkane m/z = 57	33.32	0.3 T
	******	Unknown m/z = 43	35.17	0.5 T
	******	Unknown alkane m/z = 57	35.93	0.6 T
	******	Unknown m/z = 43	38.56	0.4 T
	******	Unknown m/z = 57	39.61	0.7 T

UNITS: mg/Kg

SAMPLE NO.	CAS #	TIC NAME	RT	CONC
950413-04	******	Unknown m/z = 43	5.00	0.6 T
	******	Unknown m/z = 43	10.96	1 T
	80568	.alpha.-Pinene	11.53	0.9 T
	******	Unknown m/z = 77	12.02	0.7 T
	******	Unknown m/z = 95	16.10	0.7 T
	18309325	D-Verbenone	16.79	0.5 T
	******	Unk. organic acid m/z = 60	17.30	0.5 T
	85449	Phthalic anhydride	18.47	0.4 T
	******	Unknown alkane m/z = 43	20.87	0.4 T
	******	Unknown alkane m/z = 57	22.18	0.5 T
	******	Unknown alkane m/z = 57	22.82	0.6 T
	******	Unknown alkane m/z = 57	23.46	0.7 T
	******	Unknown alkane m/z = 57	23.54	0.8 T
	******	Unknown m/z = 60	24.20	0.5 T
	******	Unknown alkane m/z = 57	24.92	0.7 T
	******	Unknown m/z = 69	25.60	0.9 T

UNITS: mg/Kg

SAMPLE NO.	CAS #	TIC NAME	RT	CONC
950413-05	******	Unknown m/z = 43	11.19	1 T
	******	Unknown m/z = 59	36.23	0.3 T

UNITS: mg/Kg

SAMPLE NO.	CAS #	TIC NAME	RT	CONC
950413-06	******	Unknown m/z = 41	6.45	0.4 T
	******	Unknown m/z = 43	10.87	1 T
	******	Unknown m/z = 43	11.90	0.2 T
	******	Unknown m/z = 43	12.74	0.3 T
	******	Unknown m/z = 167	25.68	0.2 T
	******	Unknown m/z = 165	28.52	0.3 T
	******	Unknown m/z = 79	29.24	0.2 T
	******	Unknown PNA m/z = 252	36.61	0.5 T

UNITS: mg/Kg

SAMPLE NO.	CAS #	TIC NAME	RT	CONC
950413-07	******	Unknown m/z = 43	5.25	0.2 T
	******	Unknown m/z = 41	6.81	0.3 T
	******	Unknown m/z = 43	11.19	2 T
	******	Unknown m/z = 43	12.21	0.3 T
	******	Unknown m/z = 43	13.07	0.4 T
	******	Unknown m/z = 43	35.93	0.3 T

UNITS: ug/L

SAMPLE NO.	CAS #	TIC NAME	RT	CONC
950413-08	******	Unknown m/z = 39	5.09	920 T

UNITS: ug/L

SAMPLE NO.	CAS #	TIC NAME	RT	CONC
950413-09	******	Unknown m/z = 39	5.12	730 T

UNITS: ug/L

SAMPLE NO.	CAS #	TIC NAME	RT	CONC
950413-10	******	Unknown m/z = 39	5.10	640 T
	******	Unknown m/z = 41	9.77	5 T

UNITS: ug/L

SAMPLE NO.	CAS #	TIC NAME	RT	CONC
950413-11	******	Unknown m/z = 39	5.10	670 T
	******	Unknown m/z = 41	9.78	4 T

UNITS: ug/L

SAMPLE NO.	CAS #	TIC NAME	RT	CONC
950413-12	******	Unknown m/z = 39	5.10	490 T

UNITS: mg/Kg

SAMPLE NO.	CAS #	TIC NAME	RT	CONC
950413-13	******	Unknown m/z = 41	6.46	0.2 T
	******	Unknown m/z = 42	9.63	0.2 T
	******	Unknown m/z = 43	10.86	0.9 T
	******	Unknown m/z = 43	11.89	0.2 T
	******	Unknown m/z = 43	12.75	0.2 T
	******	Unknown alkane m/z = 57	35.23	0.2 T

UNITS: mg/Kg

SAMPLE NO.	CAS #	TIC NAME	RT	CONC
950413-14	******	Unknown m/z = 43	5.00	0.8 T
	******	Unknown m/z = 45	5.75	0.4 T
	******	Unknown m/z = 41	6.57	0.3 T
	******	Unknown m/z = 89	7.43	0.3 T
	******	Unknown m/z = 43	10.97	0.3 T
	******	Unknown m/z = 43	12.00	0.3 T
	******	Unknown m/z = 61	12.39	0.5 T
	******	Unknown m/z = 43	12.86	0.4 T
	******	Unk. organic acid m/z = 41	24.22	0.6 T
	******	Unknown m/z = 41	25.59	0.2 T
	******	Unknown m/z = 55	26.06	0.2 T
	******	Unknown m/z = 55	26.59	0.4 T

UNITS: mg/Kg

SAMPLE NO.	CAS #	TIC NAME	RT	CONC
950413-15	******	Unknown m/z = 43	5.02	0.9 T
	******	Unknown m/z = 41	6.58	0.5 T
	******	Unknown m/z = 89	7.44	0.5 T
	******	Unknown m/z = 60	8.44	0.2 T
	******	Unknown m/z = 70	10.40	0.3 T
	******	Unknown m/z = 43	10.98	2 T
	******	Unknown m/z = 43	12.00	0.3 T
	******	Unknown m/z = 43	12.33	0.3 T
	******	Unknown m/z = 43	12.86	0.9 T
	******	Unknown m/z = 41	24.22	0.4 T
	******	Unknown m/z = 41	25.60	0.3 T
	******	Unknown m/z = 55	26.07	0.2 T

UNITS: mg/Kg

SAMPLE NO.	CAS #	TIC NAME	RT	CONC
950413-16	******	Unknown m/z = 43	5.02	0.6 T
	******	Unknown m/z = 89	7.44	0.2 T
	******	Unknown m/z = 43	12.84	0.4 T
	138863	Limonene	13.45	0.5 T

UNITS: mg/Kg

SAMPLE NO.	CAS #	TIC NAME	RT	CONC
950413-17	******	Unknown m/z = 43	5.02	0.7 T
	******	Unknown m/z = 41	6.58	0.3 T
	******	Unknown m/z = 89	7.44	0.3 T
	******	Unknown m/z = 43	12.86	0.7 T
	******	Unknown alkane m/z = 57	35.49	0.4 T
	******	Unknown alkane m/z = 57	38.97	0.5 T

UNITS: ug/L

SAMPLE NO.	CAS #	TIC NAME	RT	CONC
950413-18	******	Unknown m/z = 41	8.04	4 T
	******	Unknown m/z = 57	11.71	23 T

UNITS: ug/L

SAMPLE NO.	CAS #	TIC NAME	RT	CONC
950413-19	******	Unknown m/z = 57	11.71	17 T
	******	Unknown m/z = 71	20.51	20 T
	******	Unknown m/z = 41	21.38	6 T
	******	Unknown m/z = 43	23.77	7 T
	******	Unknown m/z = 43	26.09	11 T

VOA ANALYSIS BY GC/MS

Analyst:

Frederick Petraitis
Chemist/Lockheed

TID #: 03950451

Method:

Twelve (12) soil and seven (7) aqueous samples from the Bloede Manufacturing site were analyzed for the presence of volatile organic compounds amenable to purge and trap and identifiable by mass spectrometry. The samples were collected on April 12, 1995, and were analyzed on April 17 through 28, 1995 following SOP #R3-QA210.1. This SOP is derived from the Superfund Contract Laboratory Program Statement of Work and from RCRA methodology (SW-846). Instrumentation utilized consisted of a purge and trap apparatus (Tekmar ALS 2016/LSC 2000) interfaced to a gas chromatograph/mass spectrometer (HP 5890/HP 5970) equipped with a fused silica capillary column (VOCOL 105m x 0.53mm ID x 3.0um film thickness). Concentrations of compounds were determined using the relative response of authentic standards to the closest internal standard. Only detected results are reported. Sample target compound values outside the calibration range were labeled with a "J". This indicates that the mass spectrum obtained for the sample met the identification criteria, yet the quantity present was outside the range for which the instrument accurately quantitates. All results qualified with a "J" are estimated quantities. The NQLs (nominal quantitation limits) are the quantitation limits that have been determined for each parameter analyzed by this method. The actual quantitation limit is the NQL multiplied by a factor specific for each sample. The NQL factor for all parameters analyzed was equal to 1. Soil sample results were uncorrected for % dry weight and reported on a WET weight basis.

The samples were also examined for the presence of compounds in addition to those on the Target Compound list. Authentic standards were not available to verify these tentatively identified compound (TIC) results. Tentative identification of these compounds was made on the comparison of sample spectra to the EPA/NBS54K Mass Spectral Library. Concentrations for these compounds were estimated based on the response of the closest internal standard and the assumption that the instrument response for a given tentative compound was the same as the instrument response for the internal standards. These identifications have been reported as tentative identifications with the associated quantitation values reported as estimated concentrations and qualified with a "T".

Quality Control:

Before acquisition of any sample data, the mass spectrometer is calibrated using FC43. The calibration is verified by obtaining the spectrum of a known compound (BFB). All mass assignments and relative abundances are found to be in acceptable ranges or the instrument is adjusted until an acceptable spectrum of the known is obtained. All samples were analyzed within the twelve hour BFB time criteria.

Immediately before analysis, each sample is spiked with internal standards obtained commercially. Two samples were reanalyzed due to depressed internal standard areas. All quantitations or estimates of concentrations are made in comparison to the internal standard nearest to the compound of interest.

The initial calibration for each matrix consisted of a five-point calibration curve (5, 10, 50, 100 and 200 ppb standards). Five (5) milliliters of aqueous sample and five (5) grams of soil sample for the heated method were purged. The daily calibration check standard was analyzed at a concentration of 50.0 ppb. The nominal quantitation limit (NQL) for the compound 2-chloroethylvinylether in the aqueous method on April 14 is 10.0 ppb because a four point curve was used in the initial calibration curve (10, 50, 100 and 200 ppb). The nominal quantitation limit (NQL) for the compound 2-chloroethylvinylether in the aqueous and heated methods on April 18, 20 and 24, 1995 is 50.0 ppb because a three point curve was used in the initial calibration curve (50, 100 and 200 ppb). The nominal quantitation limit (NQL) for the compound acetone in the aqueous method on April 18 and 24, 1995 is 10.0 ppb because a four point curve was used in the initial calibration curve (10, 50, 100 and 200 ppb).

For each day of sample analysis, a method blank (lab reagent blank - LRB) was prepared and examined for laboratory introduced contamination. All compounds which were found in both a LRB, trip or rinsate blank and a sample were qualified "B" if the concentration of the compound in the sample was less than ten times (<10X) the compound's concentration in the blank.

The percent Relative Standard Deviation (%RSD) for all compounds in the initial calibration of the instrument on April 20, 1995 was below thirty (30) percent for the heated method. The percent Relative Standard Deviation (%RSD) for all compounds in the initial calibration of the instrument, except 2-chloroethylvinylether on April 14, 18 and 24, 1995 and naphthalene on April 24, 1995 was below thirty (30) percent for the aqueous method. The percent difference (%D) for all compounds in the continuing calibration standard on April 17, 1995, except 2-chloroethylvinylether, was below twenty-five (25) percent when comparing the daily calibration standard to the initial calibration curve. The percent difference (%D) for several compounds in the continuing calibration standards on April 20, 21, 24 and 28, 1995 was above twenty-five (25) percent when comparing the daily calibration standard to the initial calibration curve. These compounds are qualified "J", estimated, for the positive results and "UJ", undetected estimated, for non-detected results in the affected samples.

The samples were spiked with a mixture of surrogate compounds prior to analysis. Recovery for each was determined to check for matrix interferences. The target limits are those established by the CLP. Several samples were reanalyzed due to surrogate outliers. Sixty-three (63) out of seventy-two (72) surrogate recoveries were within acceptable recovery limits.

Two (2) aliquots each of soil sample 950413-02 and aqueous sample 950413-11 were spiked with 5 ul of the matrix spike mix containing all spike compounds at a concentration of 50 ppb. The soil MS/MSD results were reported from reanalyses outside the holding time. The initial soil MS/MSD were analyzed within the holding time. The recovery for each compound was determined to check for matrix effect. Recoveries have been corrected for target compounds present in the sample. The target limits are those established by the CLP. All MS/MSD recoveries and all RPDs were within CLP target limits.

TENTATIVELY IDENTIFIED COMPOUNDS

Site: Bloede Manufacturing
Program: Superfund Removal/Remedial

SAMPLE NO.	CAS #	TIC NAME	RT	CONC(ug/Kg)
950413-01		None Detected		

SAMPLE NO.	CAS #	TIC NAME	RT	CONC(ug/Kg)
950413-02		None Detected		

SAMPLE NO.	CAS #	TIC NAME	RT	CONC(ug/Kg)
950413-03		None Detected		

SAMPLE NO.	CAS #	TIC NAME	RT	CONC(ug/Kg)
950413-04	*****	Unknown organic acid m/z=73	34.17	18 T

SAMPLE NO.	CAS #	TIC NAME	RT	CONC(ug/Kg)
950413-05		None Detected		

SAMPLE NO.	CAS #	TIC NAME	RT	CONC(ug/Kg)
950413-06		None Detected		

SAMPLE NO.	CAS #	TIC NAME	RT	CONC(ug/Kg)
950413-07		None Detected		

SAMPLE NO.	CAS #	TIC NAME	RT	CONC(ug/L)
950413-08		None Detected		

SAMPLE NO.	CAS #	TIC NAME	RT	CONC(ug/L)
950413-09		None Detected		

SAMPLE NO.	CAS #	TIC NAME	RT	CONC(ug/L)
950413-10		None Detected		

SAMPLE NO.	CAS #	TIC NAME	RT	CONC(ug/L)
950413-11		None Detected		

SAMPLE NO.	CAS #	TIC NAME	RT	CONC(ug/L)
950413-12	*****	Unknown alkane m/z=57	36.50	9 T

SAMPLE NO.	CAS #	TIC NAME	RT	CONC(ug/Kg)
950413-13		None Detected		

SAMPLE NO.	CAS #	TIC NAME	RT	CONC(ug/Kg)
950413-14		None Detected		

SAMPLE NO.	CAS #	TIC NAME	RT	CONC(ug/Kg)
950413-15		None Detected		

SAMPLE NO.	CAS #	TIC NAME	RT	CONC(ug/Kg)
950413-16		None Detected		

SAMPLE NO.	CAS #	TIC NAME	RT	CONC(ug/Kg)
950413-17		None Detected		

SAMPLE NO.	CAS #	TIC NAME	RT	CONC(ug/L)
950413-18		None Detected		

SAMPLE NO.	CAS #	TIC NAME	RT	CONC(ug/L)
950413-19		None Detected		

PCB/PESTICIDE ANALYSIS BY GC

Analyst:

Sybil L. Lucas
Chemist/Lockheed

Method:

The samples from Bloede Manufacturing were analyzed by capillary column gas chromatography for polychlorinated biphenyls and organochlorine pesticides listed on the priority pollutants compound list. The samples were collected on April 12, 1995. The extractions of the aqueous samples were performed on April 13, 1995. Approximately one liter of each aqueous sample was extracted between eighteen and twenty-four hours with methylene chloride by continuous liquid-liquid extraction. Each extract was subsequently reduced to 10 mL in hexane using Kuderna-Danish flasks. The extractions of the soil samples were performed on April 20, 1995. Approximately 15 gram portions of each soil sample were weighed, and the soil extracted by soxhlet in a 1:1 mixture of hexane and acetone. Six samples were extracted using 2 gram portions due to a complex matrix, significantly high in organic material. Each extract was subsequently reduced to 5mL in hexane using Kuderna-Danish flasks. The extractions and analyses were performed according to SOP R3-QA207.0. This SOP is a consolidated method derived from the Superfund CLP Statement of Work.

Analysis of all sample extracts began on April 18, 1995 and continued until April 24, 1995. All sample extracts were analyzed on a Hewlett-Packard 5890 gas chromatograph (GC) equipped with an automatic injector and dual electron capture detectors (ECDs). All samples, standards, and laboratory control solutions were run on dual columns connected by an injector port tee. The fused silica capillary column connected to the front ECD was a J&W Scientific DB-608 (30 m., 0.53 mm ID). The fused silica capillary column connected to the rear ECD was a Restek Rtx-1701 (30 m., 0.53 mm ID). Data were obtained from these analyses using the Millennium data acquisition and processing software. Since both the front and rear columns were fully calibrated during analyses, the lower of the results from the two columns was used for reporting.

Identification of organochlorine pesticides was accomplished by comparing retention times of known pesticides with the peaks observed in the sample extract chromatograms. A retention time window of 1% of the retention time of the standard chromatogram was used for identification of target compounds. Identification of PCBs was accomplished by matching the profile of known PCBs with patterns exhibited in the target sample chromatograms. Quantitation of multi-responding compounds was based on the average of several calibrated peaks. The quantitation of all surrogate compounds and target analytes was based on a five-point linear regression where the correlation coefficient is greater than 0.995 for pesticides, and on a three-point linear regression where the correlation coefficient is greater than 0.995 for PCBs.

The NQLs (nominal quantitation limits) are the quantitation limits that have been determined for each compound analyzed by this method. The actual quantitation limit is the NQL multiplied by an NQL factor specific for each sample. Unless otherwise noted NQL factors for each sample are 1.

All soil results are reported on a **WET WEIGHT** basis.

Quality Control:

The two fused silica capillary columns of the HP5890 Gas Chromatograph were calibrated with five levels of the certified pesticide standards. A breakdown check standard and a mid-level check standard were analyzed concurrent with sample analyses. To monitor instrument stability, each sample sequence was interspersed with mid-level check standards and ended with a mid-level check standard. If initial and/or continuing calibration check criteria are not satisfied for a particular analyte on one column, quantitation of that analyte will be performed using the other column (assuming valid linearity). If linearity cannot be achieved on either column, the problem will be addressed, and a new curve will be generated.

A representative standard or a three-point calibration for toxaphene and each PCB was analyzed at the beginning of the analytical sequence for pattern recognition or quantitation. The injection volume was 3 uL for the standards, samples, and quality control solutions. An automatic sampler (HP 7673A) was used for injection.

Continuing calibration criteria were monitored for target pesticides. Several calibration check standards demonstrated elevated relative percent differences within advisory limits. In order to reduce the impact of incremental changes in instrument sensitivity, an additional five point calibration was analyzed. All subsequent continuing calibration check standards met acceptance criteria.

Due to the complex nature of the sample matrix, non-target interference peaks may be eluting within pesticide retention time windows. Target analyte results with relative percent difference greater than 25% between the two analytical columns may be considered suspect and have been flagged with an "R".

Surrogates tetrachloro-meta-xylene (TMX) and decachlorobiphenyl (DCBP) were added to all target samples and quality control samples. With each sample set, a laboratory blank and matrix spikes (in duplicate) are analyzed. An in-house performance audit is analyzed at least quarterly to assure satisfactory method performance. Recoveries and duplicate results are monitored to demonstrate acceptable system performance.

Several samples were found to contain low levels of Aroclor 1254. Quantitation of target pesticides was complicated by interference of PCB peaks eluting within pesticide retention time windows. Suspect results have been qualified with an "I".

Five (5) of the thirty-eight (38) sample surrogate recoveries were outside the 60% - 150% advisory windows. The results for these recoveries have been flagged with an "A". Where possible, results were obtained from the lowest dilution available. In some cases, results were obtained from acid treated extracts in order to screen out interferences.

Two (2) of the sixteen (16) quality control sample surrogate recoveries were outside the 60% - 150% advisory windows. The results for these recoveries have been flagged with an "A".

One (1) of six (6) RPDs for the aqueous results was outside advisory limits. The result for this RPD has been flagged with an "A".

All soil matrix spike results were within advisory limits.

All remaining quality control results were within the advisory limits.

All soil samples required sample extract dilution due to matrix effects. In addition, all soil samples were analyzed following a mercury cleanup to remove sulfur interferences. Prior to pesticide analyses, screening analyses were performed following sulfuric acid cleanup in order to eliminate aliphatic interferences and aid in PCB identification.

SAMPLE WEIGHTS AND NQL FACTORS

SAMPLE	WEIGHT	NQL FACTOR (PEST)	NQL FACTOR (PCB)
95041301	15.0 g	5.0	1.0
95041302	15.0 g	5.0	1.0
95041303	15.0 g	5.0	1.0
95041304	2.0 g	37.5	7.5
95041305	15.0 g	5.0	1.0
95041306	2.0 g	37.5	7.5
95041307	15.0 g	5.0	1.0
95041313	15.0 g	5.0	1.0
95041314	2.0 g	7.5	7.5
95041315	2.0 g	7.5	7.5
95041316	2.0 g	7.5	7.5
95041317	2.0 g	7.5	7.5

ENVIRONMENTAL PROTECTION AGENCY
Office of Enforcement

CHAIN OF CUSTODY RECORD

REGION 3
Curtis Bldg., 6th & Walnut Sts.
Philadelphia, Pennsylvania 19106

PROJ. NO.: —
PROJECT NAME: Bloede Manufacturing Facility
SAMPLERS: (Signature) Christine Pajak, Robert A. Rothmann, Van Rum, Dale L. Murphy

STA. NO.	DATE	TIME	COMP	GRAB	STATION LOCATION		NO. OF CONTAINERS	VOA	BNA	Pest/PCB	Total metals	Cyanide	REMARKS
S-1	4/12/95	10:00		X	S-1	95041301	4	X	X	X	X	X	3-1214396 thru 3-1214399
S-2	4/12/95	10:40		X	S-2	95041302	7	X	X	X	X	X	Solid Spike, 3-1214469 thru 3-1214475
S-3	4/12/95	11:25		X	S-3	95041303	4	X	X	X	X	X	3-1214476 thru 3-1214479
S-4	4/12/95	0925		X	S-4	95041304	4	X	X	X	X	X	3-1214480 thru 3-1214483
S-5	4/12/95	10:05		X	S-5	95041305	4	X	X	X	X	X	3-1214484 thru 3-1214487
S-6	4/12/95	2:10		X	S-6	95041306	4	X	X	X	X	X	3-1214488 thru 3-1214491
S-7	4/12/95	11:25		X	S-7	95041307	4	X	X	X	X	X	Duplicate of S-3, 3-1214492 thru 3-1214495
SW-1	4/12/95	9:30		X	SW-1	95041308	6	X	X	X	X	X	3-1214496 thru 3-1214498, 3-1249050, 3-1249249, 3-1249250
SW-2	4/12/95	11:30		X	SW-2	95041309	6	X	X	X	X	X	3-1192298 thru 3-1192300, 3-1215343 thru 3-1215345
SW-3	4/12/95	12:00		X	SW-3	95041310	6	X	X	X	X	X	3-1215346 thru 3-1215350, 3-1215446
SW-4	4/12/95	10:30		X	SW-4	95041311	16	X	X	X	X	X	Aqueous Spike 3-1215447 thru 3-1215449, 3-1215252, 3-1215500, 3-1248751 thru 61
SW-5	4/12/95	11:30		X	SW-5	95041312	6	X	X	X	X	X	Duplicate of SW-2 3-1248762 thru 3-1248767
SED-1	4/12/95	9:30		X	SED-1	95041313	4	X	X	X	X	X	3-1248768 thru 3-1248771
SED-2	4/12/95	11:30		X	SED-2	95041314	4	X	X	X	X	X	3-1248772 thru 3-1248775
SED-3	4/12/95	12:00		X	SED-3	95041315	4	X	X	X	X	X	3-1248776 thru 3-1248779

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Peggy Smith	4/12/95 3:30				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	
		Alice Fay Hall	4/13/95 10:15		

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3-17017

ENVIRONMENTAL PROTECTION AGENCY
Office of Enforcement

REGION 3
Curtis Bldg., 6th & Walnut Sts.
Philadelphia, Pennsylvania 19106

CHAIN OF CUSTODY RECORD

PROJ. NO.: —

PROJECT NAME: Bloede Manufacturing Facility

SAMPLERS: (Signature) Peggy Smith, Robert M. Rothman, Vas Rama

STA. NO.	DATE	TIME	COMP	GRAB	STATION LOCATION		NO. OF CONTAINERS	VOA	BNA	Pest/PCB	Total Metals	Cyanide	REMARKS
SED-4	4/12/95	10:30		X	SED-4	95041316	4	X	X	X	X	X	3-1248780 thru 3-1248783
SED-5	4/12/95	11:30		X	SED-5	95041317	4	X	X	X	X	X	Duplicate of SED-2 3-1248784 thru 3-1248787
~~SED-~~													
B-1	4/12/95	9:40		X	B-1	95041318	PWS 6	X	X	X	X	X	Blank, 3-1248788 thru 3-1248793
RB-1	4/12/95	1140		X	RB-1	95041319	PWS 6	X	X	X	X	X	Rinsate Blank, 3-1248794 thru 3-1248799

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Peggy Smith	4/12/95 3:30				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	
		Alice M. Jay Thee	4/13/95 10:15		

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

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12 ☐ FEDEX PAK*	52 ☐ FEDEX PAK*
13 ☐ FEDEX BOX	53 ☐ FEDEX BOX
14 ☐ FEDEX TUBE	54 ☐ FEDEX TUBE
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	41 ☐ GOVT PACKAGE

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☐
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Region III, Central Regional Laboratory
Annapolis, Maryland
HAZARD AND RISK EXPOSURE DATA SHEET
LEVELS OF PERSONAL PROTECTION DURING SAMPLING

BACKGROUND

Under the authority of Section 104 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or Superfund) of 1980, Section 311 of the Clea Water Act, and Subtitle I of the Resource Conservation and Recovery Act (RCRA), EPA ha been delegated the responsibility to undertake response actions with respect to the release or potential release of oil, petroleum, or hazardous substances that pose a substantial threat to human health or welfare, or the environment.

GENERAL

This form is to be used when collecting Environmental Samples (i.e. streams, farm ponds, wells, soils etc.) and for Hazardous Samples (i.e. drums, storage tanks, lagoons, leachates, hazardous waste sites). This information is intended for use as a guide for the safe handling of these laboratory samples in accordance with EPA and OSHA regulations. The sample classification(s) and levels of personal protection used by the sampler in all situations will enable the analyst to be better aware of potential exposure to substances in air, splashes of liquids, or other direct contact with material due to work being done.

DEGREE OF PROTECTION

____ Level A: Highest level of respiratory, skin, and eye protection needed.
Fully encapsulated suit, respirator self-contained (Tank type)

____ Level B: Highest level of respiratory protection but lesser level of skin protectic needed.
Chemical suit, respirator self-contained (Tank type)

____ Level C: Lesser level of respiratory protection than Level B. Skin protection criteria are similar to Level B.
Chemical suit, cannister respirator/cartridge

__X__ Level D: Work uniform without any respirator or skin hazards.
Lab coat, gloves etc.

CLASSIFIED FIELD SAMPLES

__X__ Environmental ____ Hazardous ____ Comb. (Env. & Haz.) ____ Radioactive

Site Name: Bloede Manufacturing Facility Sampling Date: 4/12/95

Sta No. Soils 1-7, SW-1-5, SED 1-5, Blank, ~~Rinse Blk~~, _____, _____, _____, _____, _____
Field pH: N/A, 6-7.5, N/A, 6, 6, _____, _____, _____, _____, _____
(must be taken prior to submission of aqueous samples)

Sampler: Chris Pajak Work Phone Number: 410 631 3493

Personal observations at time of sampling (surroundings): sewage odor at some locations, ~~Stas~~ Soil-7 and ~~Soil-6~~ were taken in the proximity of an empty drum.

Sample collection observations (physical sample, odors etc.) no odors.